DRAFT

United States Department of the Interior
Bureau of Land Management
Montana State Office

United States Department of Agriculture
Forest Service
Northern Region

October 1999

OFF-HIGHWAY VEHICLE
ENVIRONMENTAL IMPACT STATEMENT AND PLAN AMENDMENT FOR MONTANA, NORTH DAKOTA AND PORTIONS OF SOUTH DAKOTA

Department of the Interior
Bureau of Land Management
Montana State Office
P.O. Box 36800
Billings, Montana 59107-6800

Department of Agriculture
Forest Service
Northern Region
P.O. Box 7669
Missoula, Montana 59807

Dear Reader:

In a few days you will receive the Bureau of Land Management (BLM) and Forest Service (FS) Draft Off-Highway Vehicle (OHV) Environmental Impact Statement (EIS) and Plan Amendment or a summary of the document. Within that mailing is a letter and a list of all of the open houses that had been scheduled in Montana, North Dakota, and South Dakota during the review period. We had to reschedule some of those open houses because of an internal delay in the process. **Please use the attached list to choose the open house you wish to attend.** Your local newspaper will also carry an article on the correct locations. We apologize for the inconvenience.

Reviewers should provide the agencies with their comments during the 90-day review period. For consideration, your written comments must be received by close of business on **February 24, 2000** (this is a correction from the draft EIS which indicated February 3).

Written comments should be addressed to the OHV Plan Amendment, Lewistown Field Office, P.O. Box 1160, Lewistown, MT 59457-1160. Comments may also be send electronically to ohvmail@mt.blm.gov. Please include your name and complete mailing address on all comments.

For additional information, please contact your local BLM or FS office or contact Jerry Majerus (BLM) at (406) 538-1924 or Jodi DeHerrera (FS) at (406) 758-5332.

Larry E. Hamilton
State Director

Dale N. Bosworth
Regional Forester

Bureau of Land Management and Forest Service
Off-Highway Vehicle (OHV)
Draft EIS/Plan Amendment

OPEN HOUSES

DATE	*LOCATION*	*TIME*	*PLACE*
North Dakota			
December 1, 1999	Bismarck, ND	4:00-8:00 pm	U.S. Forest Service, 240 W. Century
December 2, 1999	Watford City, ND	4:00-8:00 pm	U.S. Forest Service, 1.5 miles S. of Watford City
December 6, 1999	Dickinson, ND	4:00-8:00 pm	BLM Office, 2933 3rd Avenue West
December 7, 1999	Bowman, ND	4:00-8:00 pm	Long Pines Steak House, 13 1st Ave. SE
South Dakota			
December 3, 1999	Rapid City, SD	3:00-7:00 pm	West River Research & Ag. Ctr., 1905 Plaza Blvd.
January 18, 2000	Lemmon, SD	2:00-6:00 pm	Lemmon Elementary School
January 19, 2000	Buffalo, SD	2:00-6:00 pm	Harding County Jury/Court Room
January 20, 2000	Pierre, SD	2:00-6:00 pm	Governors Inn
January 21, 2000	Belle Fourche, SD	2:00-6:00 pm	BLM Office
Montana			
November 30, 1999	Billings, MT	4:00-8:00 pm	BLM Office, 5001 Southgate Drive
November 30, 1999	Miles City, MT	5:00-7:00 pm	BLM Office Conf. Rm., 111 Garryowen Road
December 1, 1999	Red Lodge, MT	4:00-8:00 pm	U.S. Forest Service
December 1, 1999	Colstrip, MT	5:00-7:00 pm	Bicentennial Library, 415 Willow Ave.
December 2, 1999	Great Falls, MT	4:00-7:00 pm	BLM/FS Office, 1101 15th St. N.
December 2, 1999	Lincoln, MT	4:00-8:00 pm	Lincoln Community Hall
December 2, 1999	Glendive, MT	5:00-7:00 pm	Glendive Medical Center, Carney Conf. Rm. #2
December 6, 1999	Havre, MT	4:00-7:00 pm	BLM Office
December 6, 1999	Townsend, MT	4:00-8:00 pm	Townsend Library
December 7, 1999	Missoula, MT	4:00-8:00 pm	Boone and Crockett Club
December 7, 1999	Hamilton, MT	4:00-8:00 pm	Senior Center, 820 North 4th
December 7, 1999	Malta, MT	4:00-7:00 pm	BLM Office
December 7, 1999	Broadus, MT	5:00-7:00 pm	Powder River County Courthouse Election Rm.
December 8, 1999	Helena, MT	4:00-8:00 pm	U.S. Forest Service, 2880 Skyway Drive
December 8, 1999	Bozeman, MT	4:00-7:00 pm	Gallatin Co. Courthouse, 311 W. Main
December 8, 1999	Glasgow, MT	4:00-7:00 pm	BLM Office
December 9, 1999	Butte, MT	4:00-8:00 pm	BLM Office, 106 N. Parkmont
December 9, 1999	Dillon, MT	4:00-8:00 pm	U.S. Forest Service, 420 Barrett St.
December 14, 1999	Browning, MT	3:30-7:00 pm	Tribal Offices
December 14, 1999	Lewistown, MT	4:00-7:00 pm	BLM Office, Airport Road
December 14, 1999	Libby, MT	4:00-9:00 pm	Libby City Hall, Ponderosa Room
December 15, 1999	Choteau, MT	2:00-7:00 pm	Stage Stop Inn
December 15, 1999	Trout Creek, MT	4:00-9:00 pm	U.S. Forest Service
December 16, 1999	Eureka, MT	7:00-10:00 pm	Lincoln Co. Electric
January 12, 2000	Kalispell, MT	5:00-8:00 pm	Outlaw Inn
January 24, 2000	Ekalaka, MT	2:00-6:00 pm	Carter County Jury/Court Room

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Department of Agriculture
Forest Service
Northern Region
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Missoula, Montana 59807

Dear Reader:

Enclosed for your review and comment is the Draft Off-Highway Vehicle (OHV) Environmental Impact Statement (EIS) and Plan Amendment. This draft EIS/plan amendment discloses the potential environmental consequences of managing cross-country OHV use on public lands administered by the Bureau of Land Management (BLM) and Forest Service (FS) Northern Region, in Montana, North Dakota, and portions of South Dakota (excluding the Black Hills National Forest, Buffalo Gap Grasslands and the Fort Pierre Grasslands). The BLM and FS are joint lead agencies responsible for preparation of the EIS/plan amendment.

Five alternatives, including a No Action Alternative, were developed to meet the purpose and need of the project and respond to significant issues. The purpose and need are to address the impacts of OHV travel on open areas that are currently available to motorized cross-country travel. The No Action Alternative would maintain current management. Areas currently open yearlong or seasonally to cross-country travel would remain open. Alternatives 1 and 2 would restrict motorized cross-country travel yearlong. Alternative 3 would restrict motorized cross-country travel yearlong in North Dakota, most of Montana, and portions of South Dakota. Alternative 4 would limit motorized cross-country travel seasonally. Exceptions for camping, game retrieval, and for persons with disabilities would apply in Alternatives 2, 3 and 4. Alternative 2 is the preferred alternative.

Open houses will be held in communities in Montana, North Dakota, and South Dakota during the review period. The locations for the open houses are listed on the next page but also look for an article in your local paper because locations, dates and/or times may change.

Reviewers should provide the agencies with their comments during the 90-day review period of the draft EIS/plan amendment. This will enable the agencies to analyze and respond to the comments and use information acquired in preparation of the final EIS/plan amendment. Comments should be specific and may address the adequacy of the document and/or merits of the alternatives discussed. For consideration, your written comments must be received by close of business on February 3, 2000. Written comments should be addressed to OHV Plan Amendment, Lewistown Field Office, P.O. Box 1160, Lewistown, MT 59457-1160. Comments may also be sent electronically to ohvmail@mt.blm.gov. Please include your name and complete mailing address on all comments.

Comments, including names and street addresses of respondents, will be available for public review at the above Lewistown address during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except holidays. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be available for public inspection in their entirety.

For additional information or if you would like a briefing on the document, please contact your local BLM or FS office or contact Jerry Majerus (BLM) at (406) 538-1924 or Dick Kramer (FS) at (406) 329-1008. You can also visit our website at www.mt.blm.gov or www.fs.fed.us/r1.

Larry E. Hamilton
State Director

Dale N. Bosworth
Regional Forester

OPEN HOUSES
OHV DRAFT EIS/PLAN AMENDMENT

DATE	*LOCATION*	*TIME*	*PLACE*
North Dakota			
Nov. 29	Bowman, ND	4:00-8:00 pm	To be determined
Nov. 30	Dickinson, ND	4:00-8:00 pm	BLM Office, 2933 3rd Ave. West
Dec. 1	Bismarck, ND	4:00-8:00 pm	U.S. Forest Service, 240 W. Century
Dec. 2	Watford City, ND	4:00-8:00 pm	To be determined
South Dakota			
Nov. 15	Lemmon, SD	2:00-6:00 pm	To be determined
Nov. 16	Buffalo, SD	2:00-6:00 pm	Harding County Jury/Court Room
Nov. 17	Pierre, SD	2:00-6:00 pm	RAMKOTA
Nov. 18	Belle Fourche, SD	2:00-6:00 pm	BLM Office
Dec. 3	Rapid City, SD	3:00-7:00 pm	West River Research & Ag. Ctr., 1905 Plaza Blvd.
Montana			
Nov. 16	Hamilton, MT	4:00-8:00 pm	To be determined
Nov. 16	Libby, MT	4:00-9:00 pm	Libby City Hall, Ponderosa Room
Nov. 17	Trout Creek, MT	1:00-4:00 pm	U.S. Forest Service
Nov. 17	Kalispell, MT	5:00-8:00 pm	Outlaw Inn
Nov. 18	Eureka, MT	6:00-9:00 pm	Lincoln Co. Electric
Nov. 18	Lewistown, MT	4:00-7:00 pm	BLM Office, Airport Road
Nov. 19	Ekalaka, MT	2:00-6:00 pm	Carter County Jury/Court Room
Nov. 22	Great Falls, MT	4:00-7:00 pm	BLM/FS Office, 1101 15th St. N.
Nov. 22	Bozeman, MT	4:00-8:00 pm	Gallatin Co Courthouse, 311 W. Main
Nov. 30	Billings, MT	4:00-8:00 pm	BLM Office, 5001 Southgate Drive
Nov. 30	Miles City, MT	5:00-7:00 pm	BLM Office Conf. Rm., 111 Garryowen Road
Dec. 1	Red Lodge, MT	4:00-8:00 pm	U.S. Forest Service
Dec. 1	Colstrip, MT	5:00-7:00 pm	Bicentennial Library, 415 Willow Ave.
Dec. 2	Lincoln, MT	4:00-8:00 pm	Lincoln Community Hall
Dec. 2	Glendive, MT	5:00-7:00 pm	Glendive Medical Ctr, Carney Conf. Rm. #2
Dec. 6	Townsend, MT	4:00-8:00 pm	Townsend Library
Dec. 7	Missoula, MT	4:00-8:00 pm	Boone and Crocket Club
Dec. 7	Malta, MT	4:00-7:00 pm	BLM Office
Dec. 7	Havre, MT	4:00-7:00 pm	BLM Office
Dec. 7	Broadus, MT	5:00-7:00 pm	Powder River County Courthouse Election Rm
Dec. 8	Helena, MT	4:00-8:00 pm	U.S. Forest Service, 2880 Skyway Drive
Dec. 8	Glasgow, MT	4:00-7:00 pm	BLM Office
Dec. 9	Dillon, MT	4:00-8:00 pm	USDA Service Center, 420 Barrett St.
Dec. 9	Butte, MT	4:00-8:00 pm	BLM Office, 106 N. Parkmont
Dec. 14	Browning, MT	3:30-7:00 pm	Tribal Offices
Dec. 15	Choteau, MT	2:00-7:00 pm	Best Western Stage Stop Inn

OFF-HIGHWAY VEHICLE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND PLAN AMENDMENT FOR MONTANA, NORTH DAKOTA, AND PORTIONS OF SOUTH DAKOTA

October, 1999

Responsible Joint Lead Agencies	USDA Forest Service	USDI Bureau of Land Management
Responsible Officials	Dale N. Bosworth USFS Regional Forester P.O. Box 7669 Missoula, MT 59807	Larry E. Hamilton Montana State Office P.O. Box 36800 Billings, MT 59107-6800
Send Comments to or Request Information from:	Dick Kramer Co-Project Leader Lolo National Forest Building 24, Fort Missoula Missoula, MT 59804 406-329-1008	Jerry Majerus Co-Project Leader Lewistown Field Office Airport Rd., P.O. Box 1160 Lewistown, MT 59457-1160 406-538-1924

Comments Must Be Received By: February 3, 2000.

ABSTRACT

This Draft Environmental Impact Statement and Plan Amendment describes the analysis that was completed on the proposed management changes in off-highway vehicle (OHV) use on public lands administered by the Bureau of Land Management and Forest Service, Northern Region, in Montana, North Dakota, and portions of South Dakota.

Five alternatives, including a No Action Alternative, were developed to meet the purpose and need of the project and respond to significant issues. The purpose and need are to address the impacts of OHV travel on open areas that are currently available to motorized cross-country travel. The No Action Alternative would maintain current management. Areas currently open yearlong or seasonally to cross-country travel would remain open. Alternatives 1 and 2 would restrict motorized cross-country travel yearlong. Alternative 3 would restrict motorized cross-country travel yearlong in North Dakota, most of Montana, and portions of South Dakota. Alternative 4 would limit motorized cross-country travel seasonally. Exceptions for camping, game retrieval, and for persons with disabilities would apply in Alternatives 2, 3 and 4.

Reviewers should provide the agencies with their comments during the 90-day review period of the Draft Environmental Impact Statement. This will enable the agencies to analyze and respond to the comments and use information acquired in the preparation of the Final Environmental Impact Statement. Comments on the Draft Environmental Impact Statement should be specific and may address the adequacy of the Statement and/or the merits of the alternatives discussed (40 CFR 1503.3).

SUMMARY

INTRODUCTION

This is a summary of the Draft Environmental Impact Statement (EIS) and Plan Amendment, which discloses the potential environmental consequences of managing cross-country off-highway vehicle (OHV) use on public lands administered by the Bureau of Land Management (BLM) and Forest Service (FS), Northern Region, in Montana, North Dakota, and portions of South Dakota (excluding the Black Hills National Forest, Buffalo Gap Grasslands and the Fort Pierre Grasslands). The BLM and FS are joint lead agencies responsible for preparation of the EIS/plan amendment.

Each BLM Field Office, and National Forest and Grassland manages OHV's based on its resource management plan or forest plan. The EIS/plan amendment would amend those plans.

PURPOSE AND NEED

Purpose

The purpose of the EIS/plan amendment is to address the impacts of wheeled (motorcycles, four-wheel drive vehicles, sport utility vehicles, all-terrain vehicles, etc.) off-highway vehicle travel on open areas that are currently available to motorized cross-country travel. It will amend forest plan and resource management plan OHV area designations to preserve future options for site-specific travel planning. This would provide timely interim direction that would prevent further resource damage, user conflicts, and related problems, including new user-created roads, associated with motorized cross-country travel until subsequent site-specific travel planning is complete. Site-specific travel planning, or activity planning, will address OHV use on specific roads and trails. This amendment would not change the current limited/restricted yearlong or closed designations, or designated intensive off-road vehicle use areas.

Need

Currently, about 16 million acres of public land are open to motorized cross-country travel either yearlong or seasonally which has the potential to spread noxious weeds, cause erosion, damage cultural sites, create user conflicts, disrupt wildlife, and damage wildlife habitat. Problems do not occur equally throughout the analysis area. Motorized cross-country travel is generally limited by current technology to areas that are less steep and have more open vegetative communities. Random use in open areas has created trail networks throughout the analysis area. Some of this use has occurred in riparian areas and on highly erodible slopes.

The BLM and FS are concerned that continuing unrestricted use could potentially increase these problems. This proposal to manage the cross-country aspect of motorized vehicle use is part of our responsibility as public land managers to balance human use with the need to protect natural resources. Members of the public, BLM's Resource Advisory Councils, and Montana Fish, Wildlife and Parks Commission have also shared their concerns about unrestricted OHV travel on public lands.

ISSUES

Primary Issues

Five primary issues were identified that reflect concerns or conflicts that could be partially or totally resolved through the EIS process. These issues are need for plan amendment, exceptions, enforceability, flexibility, and identified problems. While these five issues are by no means the complete list of concerns identified during the public scoping, these issues did help guide the development of the alternatives.

Need for Plan Amendment: Some of the public expressed concern that the proposal is not needed or is too restrictive. Of particular concern was the need for off-highway vehicle decisions to be made at the local level rather than for a three-state area. Others expressed concern that the proposal was not restrictive enough and the agencies could not wait 10 to 15 years to complete site-specific travel planning.

Exceptions: Some of the public expressed concerns of whether or not exceptions for motorized cross- country travel should be allowed. These include camping, disabled access, game retrieval, BLM and FS administrative use, and effects on lessees and permittees. Some are concerned that the general public is unfairly constrained while special uses are not constrained. Other concerns are that exceptions are confusing and lead to abuse and enforcement problems. Additional concerns include the need to provide camping for dispersed recreation users and the need to allow for game retrieval in isolated areas.

Enforceability: Some of the public expressed concerns that the proposal needs to be enforceable and provide

consistency between the two agencies. The proposal also needs to provide implementation of the Executive Orders and regulations pertaining to off-highway vehicles. This should include education and signing.

Flexibility: Some of the public expressed concerns that the proposal needs to be flexible and allow motorized cross-country travel or allow exceptions under certain conditions. The proposal needs to look at seasonal, rather than yearlong restrictions, when problems are occurring. The proposal should only address problems where they occur.

Identified Problems: Some of the public expressed concerns that the proposal needs to look at the trend in identified problems to stop further adverse effects of motorized cross-country travel. Concerns have also been raised that the agencies do not have justification for the proposal and should only look at areas with specific problems.

Resource Issues

A number of issues were brought up that were important for the analysis. Details of the effects on specific resources have been addressed in Chapter 3 of the draft EIS/plan amendment. They are listed as follows:

What are the effects of OHV travel in open and seasonally open areas on public land on:

- Other forms of recreation (user conflicts),
- Noise pollution and serenity for other recreation users,
- Scenery and aesthetics,
- Inventoried Roadless, Recommended Wilderness, and Wilderness Study Areas,
- Economics of recreation opportunities,
- Cultural resources and tribal use,
- The spread of noxious weeds,
- Threatened, endangered and sensitive species; wildlife habitat; wildlife habitat effectiveness; and wildlife displacement,
- Water quality, soil erosion, wetlands and riparian areas, and
- Air quality.

Other Issues

A number of other issues were also raised during the scoping process that needed to be addressed and are discussed in more detail in Chapter 1 of the draft EIS/plan amendment. These issues are listed as follows.

- Are current laws and regulations adequate to provide for OHV use and provide for protection of other resources?
- What are the effects of further OHV travel restrictions on personal freedom and right to access public land?
- How can a one-size-fits-all decision work for a three-state area?
- How will site-specific problems be addressed soon enough with a 10-15 year window for completion of site-specific travel planning?
- How will the decision affect the North Dakota and South Dakota state section line laws and R.S. 2477?
- How will the decision affect the status of user-created roads and trails?
- How will the decision affect the 40"/50" rule for OHV's?
- What is an existing road or trail?
- How will the decision affect existing permits and leases?
- How will the decision be implemented and how will roads and trails be signed?

ALTERNATIVES

Alternatives Eliminated from Detailed Study

The following alternatives were eliminated from detailed study because they do not meet the purpose and need and/or due to technical, legal, or other constraints. More detail on these alternatives and why they were eliminated from detailed study can be found in Chapter 2 of the draft EIS/plan amendment.

- Forest Service Development Roads and Trails and BLM Designated Routes
- Snowmobiles
- Site-Specific Alternatives
- Block Management
- Restrict Areas Greater Than 5,000 Acres and Close All Areas to Off-Highway Vehicle Use
- Closed Unless Posted Open
- Montana State Lands Policy

Alternatives Considered in Detail

Management Common To All Alternatives

The following management guidance will continue regardless of which alternative is selected and is common to all alternatives.

The BLM and FS regulations (43 CFR 8341.2 and 36 CFR 295.2 and 295.5) allow for area and road or trail closures where off-road vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife

habitat, cultural resources, threatened or endangered species, other authorized uses, or other resources. The authorized officer can immediately close the areas affected by the type of vehicle causing the adverse effect until the effects are eliminated and measures are implemented to prevent future recurrence.

Forest Service land management plans in the Northern Region are scheduled to be revised in two to four years. Forest plans must be revised at least every 15 years. These plan revisions will address travel management.

The BLM's resource management plans have no revision schedule but can be amended or revised. An amendment is initiated by the need to consider the findings from monitoring and evaluation, new data, new or revised policy, or a change in circumstances significantly affecting a part of the approved plan. If changes in the planning area affect major portions of the plan or the entire plan, a complete revision may be necessary.

After the plan amendment is completed, the BLM and FS would continue to develop travel management plans for geographical areas (i.e., landscape analysis, watershed plans, or activity plans). Through travel planning, roads and trails would be inventoried, mapped, analyzed, and designated as open, seasonally open, or closed. In addition, site-specific travel planning may identify areas for trail construction and/or improvement or specific areas where cross-country travel may be appropriate.

The Alternatives: Five alternatives including the No Action Alternative were developed and analyzed in detail. The major management actions and environmental consequences of the five alternatives are summarized in Tables S.1 and S.2. These tables are summaries of the alternative descriptions contained in Chapter 2 and the environmental consequences in Chapter 3. The reader is referred to the text in those chapters for specifics and more detail about the information in the tables.

Table S.1 Summary of Alternatives

Management	No Action (Current Management)	Alternative 1	Alternative 2 (Preferred Alternative)	Alternative 3	Alternative 4
Areas open yearlong or seasonally	All areas	None	None	Flathead NF, Kootenai NF and Bitterroot NF	All areas open 6/15 to 8/31 and 12/2 to 2/15
Prohibits cross-country travel	No	Yes	Yes	Yes, except in Flathead NF, Kootenai NF and Bitterroot NF	Restricted
Emergency use	Allowed	Allowed	Allowed	Allowed	Allowed
Administrative use	Allowed	Authorization Required	Allowed	Allowed	Allowed
Lease and permit holders	Allowed	Not allowed unless specifically authorized	Allowed unless specifically prohibited	Allowed unless specifically prohibited	Allowed unless specifically prohibited
Exceptions for motorized cross-country travel - Camping	Allowed	Within 50 feet of roads and trails by the most direct route	Within 300 feet of roads and trails by the most direct route	Within 300 feet of roads and trails by the most direct route	Within 300 feet of roads and trails by the most direct route
- Game retrieval	Allowed	Not allowed	Allowed by the most direct route in portions of Montana * Other areas - not allowed Could be modified in travel planning	Allowed from 10:00 a.m. to 2:00 p.m. by the most direct route Could be modified in travel planning	Allowed by the most direct route Could be modified in travel planning
- Disabled access	Allowed	Not allowed	Access by permit	Access by permit	Access by permit
- Firewood and Christmas tree cutting	Specified by permit	Not allowed	Specified by permit	Specified by permit	Specified by permit

*Game retrieval is allowed in Montana only in the following field units: Miles City FO, Billings FO, Malta FO, Lewistown FO with the exception of the Great Falls Field Station, and Custer NF with the exception of the Beartooth Ranger District.

Table S.2 Summary of Environmental Consequences

Identified Environmental Issues	No Action (Current Management)	Alternative 1	Alternative 2 (Preferred Alternative)	Alternative 3	Alternative 4
Recreation					
User Conflicts	User conflicts would continue to increase.	User conflicts would be substantially reduced.	User conflicts would be substantially reduced.	The effects under Alt. 2 apply where motorized cross-country travel is prohibited. The effects under No Action apply elsewhere.	The effects under No Action apply from 6/15-8/31 and 12/2-2/15. Effects of Alt. 2 apply during other time periods.
Motorized Recreation	Existing opportunities would remain.	Motorized users would still have access to roads and trails.	Motorized users would still have access to roads and trails.	Same as above.	Same as above.
Nonmotorized Recreation	Recreation experience would be reduced.	Recreation experience would improve.	Recreation experience would improve.	Same as above.	Same as above.
Visuals	Objectives for scenic values may not be met.	Additional disturbances to visuals would be eliminated.	Additional disturbances to visuals would be eliminated.	Same as above.	Same as above.
Roadless/Wilderness	Motorized cross-country use may have an effect on the naturalness of these areas.	This alt. would enhance the protection of the naturalness of these areas.	This alt. would enhance the protection of the naturalness of these areas.	Same as above.	Seasonal motorized cross-country use may have an effect on the naturalness of these areas.
Social					
Aging Recreationists	Motorized cross-country travel opportunities are available.	Motorized cross-country travel opportunities would not be available.	Motorized cross-country travel opportunities would not be available.	Motorized cross-country travel opportunities would not be available in most areas.	Motorized cross-country travel opportunities would be available from 6/15-8/31 and from 12/2-2/15.
Environmental Advocacy	This group feels that current management does not sufficiently protect resources on public lands.	This alt. may meet the needs of this group who value resources on public lands for a variety of reasons.	This alt. may meet the needs of this group who value resources on public lands for a variety of reasons.	This alt. may meet the needs of this group in most areas. In open areas, this group feels that current management does not protect resources on public lands.	This alt. does not meet the needs of this group because it does not go far enough to protect the resources on public lands.
Lessees and Permittees	Motorized cross-country travel opportunities are available to administer a lease or permit.	Motorized cross-country travel to administer a lease or permit would only be allowed under specific terms of the lease or permit.	Motorized cross-country travel opportunities are available to administer a lease or permit.	Motorized cross-country travel opportunities are available to administer a lease or permit.	Motorized cross-country travel opportunities are available to administer a lease or permit.

Table S.2 Summary of Environmental Consequences (continued)

Identified Environmental Issues	No Action (Current Management)	Alternative 1	Alternative 2 (Preferred Alternative)	Alternative 3	Alternative 4
Rural Communities/ Personal Freedom	This alt. best responds to rural communities who prefer that current activities on public lands are not limited.	This alt. is not consistent with their preference for leaving activities on public lands at their current levels.	This alt. is not consistent with their preference for leaving activities on public lands at their current levels.	The effects under Alt. 2 apply where motorized cross-country travel is prohibited. The effects under No Action apply elsewhere.	This alt. is not consistent with their preference for leaving activities on public lands at current levels.
Economics of OHV Industry	Projected number of jobs is expected to increase due to projected increases in OHV's and trucks.	Minor reductions in jobs and employee compensations may occur.	Minor reductions in jobs and employee compensations may occur.	Minor reductions in jobs and employee compensations may occur.	Minor reductions in jobs and employee compensations may occur.
Cultural Resources	This alt. would cause the greatest direct and indirect impacts to cultural sites in the analysis area.	This alt. would offer the most protection for cultural resources.	This alt. would offer the most protection for cultural resources.	The effects under Alt. 2 apply where motorized cross-country travel is prohibited. The effects under No Action apply elsewhere.	This alt. would cause the greatest direct and indirect impacts to cultural sites in the analysis area.
Vegetation and Weeds	This alt. has the greatest risk for expanding and introducing existing and new weeds to BLM and FS lands.	This alt. has the lowest risk for expanding and introducing existing and new weeds to BLM and FS lands.	This alt. has the next lowest risk for expanding and introducing existing and new weeds to BLM and FS lands.	This alt. is substantially less at risk than the No Action Alt. because only 6.5 million acres are open and of those lands, many acres are not available because of the dense forest cover.	The effects of this alt. are similar to the No Action Alt.
Wildlife	The current level of impact to wildlife would continue with this alt.	Direct and indirect effects would be reduced (habitat fragmentation, habitat abandonment, physiological effects, and indirect impacts of weeds).	Direct and indirect effects would be reduced (habitat fragmentation, habitat abandonment, physiological effects, and indirect impacts of weeds).	The effects under Alt. 2 apply where motorized cross-country travel is prohibited. The effects under No Action apply elsewhere.	The effects under No Action apply from 6/15-8/31 and 12/2-2/15. Effects of Alt. 2 apply during the other time periods. Overall, impacts to wildlife might be considerably less since closed period is when most travel occurs (fall hunting).

Table S.2 Summary of Environmental Consequences (concluded)

Identified Environmental Issues	No Action (Current Management)	Alternative 1	Alternative 2 (Preferred Alternative)	Alternative 3	Alternative 4
Aquatic Resources	The No Action alt. would provide no risk reduction for further degradation of aquatic resources.	Alts. 1 and 2 would provide the greatest reduction in risk for further degradation of aquatic resources by motorized cross-country travel.	Alts. 1 and 2 would provide the greatest reduction in risk for further degradation of aquatic resources by motorized cross-country travel.	The effects under Alt. 2 apply where motorized cross-country travel is prohibited. The effects under No Action apply elsewhere.	Overall, the effects of this alt. would be less than those associated with the No Action alt. because there are fewer days during which motorized cross-country travel could occur.
Soils	This alt. has the greatest potential to impact soil resources	Impacts to soil resources would be kept to a minimum and be widely dispersed.	Effects to soils would be the same as Alt. 1.	Overall accelerated soil erosion from motorized cross-country travel would be reduced except if motorized cross-country travel were to occur in a concentrated manner.	This alt. would reduce soil erosion by reducing and shifting motorized cross-country travel to periods when soils are likely dry or frozen.
Air	This alt. has the greatest potential to influence and degrade air quality in the immediate area.	Only a substantial and constant increase in OHV vehicle traffic on existing roads and trails would cause a measurable effect outside of the immediate area.	Only a substantial and constant increase in OHV vehicle traffic on existing roads and trails would cause a measurable effect outside of the immediate area.	The effects under Alt. 2 apply where motorized cross-country travel is prohibited. The effects under No Action apply elsewhere.	This alt. offers no real difference from the No Action Alt.
Minerals	No impact.	Increased administrative review before some routine activities could occur.	No impact to existing holders of mineral leases or permits. Some increase in administrative review of casual use for pre-permit surveying and staking.	The effects under Alt. 2 apply where motorized cross-country travel is prohibited. The effects under No Action apply elsewhere.	The effects under No Action apply from 6/15-8/31 and 12/2-2/15. Effects of Alt. 2 apply during the other time periods.

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CHAPTER 1: PURPOSE AND NEED

INTRODUCTION

This draft programmatic environmental impact statement (EIS) and plan amendment discloses the potential environmental consequences of managing cross-country off-highway vehicle (OHV) use on public lands administered by the Bureau of Land Management (BLM) and Forest Service (FS), Northern Region, in Montana, North Dakota, and portions of South Dakota (excluding the Black Hills National Forest, Buffalo Gap Grasslands and the Fort Pierre Grasslands). The agencies recognize that many recreation users do not differentiate between BLM and FS lands. The agencies feel it is better customer service to have consistent policies across agency boundaries; therefore, the plan amendment will be a joint BLM and FS proposal. The BLM and FS are joint lead agencies responsible for preparation of the EIS/plan amendment.

Each BLM field office, and national forest and grassland manages OHV's based on its resource management plan or forest plan. This EIS/plan amendment would amend the BLM and FS plans displayed in Table 1.1. The Lolo National Forest and Missoula Field Office are not affected by this decision because they have no lands open to motorized cross-country travel.

Table 1.1 Existing BLM and Forest Service Management Plans

BLM Management Plans	*FS Forest Plans*
Big Dry Resource Management Plan (1996)	Beaverhead Forest Plan (1986)
Billings Resource Management Plan (1984)	Bitterroot National Forest Plan (1987)
Dillon Management Framework Plan (1978)	Custer National Forest Plan (1987)
Headwaters Resource Management Plan (1984)	(Includes Dakota Prairie Grasslands)
Judith-Valley-Phillips Resource Management Plan (1994)	Deerlodge Forest Plan (1987)
North Dakota Resource Management Plan (1987)	Flathead National Forest Plan (1986)
Powder River Resource Management Plan (1986)	Gallatin National Forest Plan (1987)
South Dakota Resource Management Plan (1986)	Helena National Forest Plan (1986)
West HiLine Resource Management Plan (1988)	Kootenai National Forest Plan (1987)

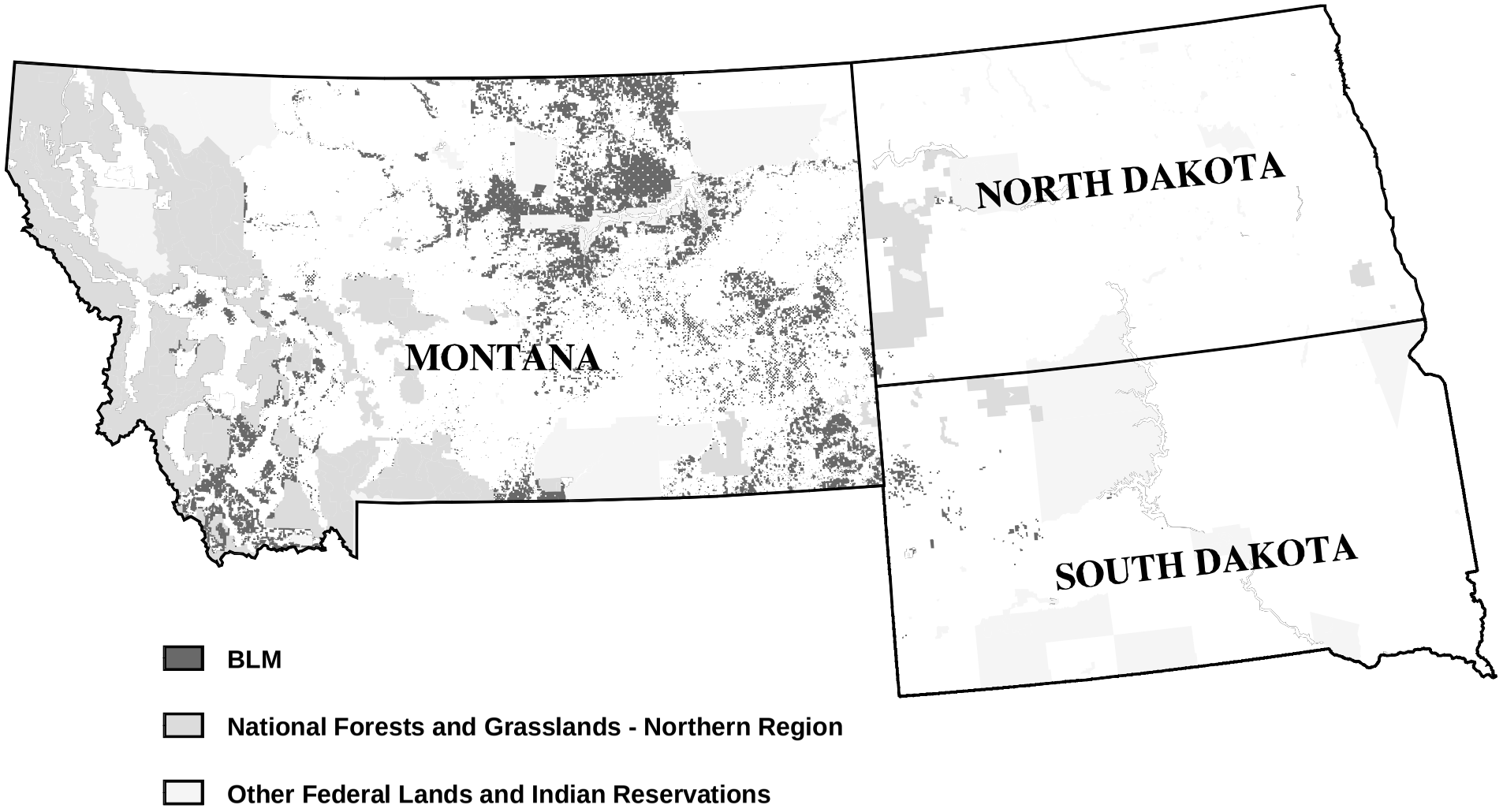
LOCATION OF THE PLANNING AREA

The BLM and FS Northern Region administer 26.6 million acres of public land in Montana, North Dakota, and portions of South Dakota. The BLM administers 8.4 million acres of public land within 9 field offices and the FS administers 18.2 million acres of public land located within 9 national forests and the Dakota Prairie Grasslands. Figure 1.1 displays lands affected by this analysis. The field offices and national forests are displayed in Table 1.2.

Table 1.2 Field Offices, National Forests and Grasslands

BLM Field Offices	*Acres*	*National Forests and Grasslands*	*Acres*
Billings	426,486	Beaverhead-Deerlodge National Forest	3,352,272
Butte	311,300	Bitterroot National Forest	1,117,082
Dillon	968,108	Custer National Forest	1,187,143
Lewistown	1,392,384	Dakota Prairie Grasslands	1,259,947
Malta	2,104,576	Flathead National Forest	2,353,049
Miles City	2,699,134	Gallatin National Forest	1,800,626
Missoula	162,972	Helena National Forest	975,413
North Dakota	59,757	Kootenai National Forest	2,220,179
South Dakota	280,672	Lewis and Clark National Forest	1,862,289
		Lolo National Forest	2,082,331

FIGURE 1.1
OHV EIS and Plan Amendment
Analysis Area



BACKGROUND

The increased popularity and widespread use of OHV's on public lands in the 1960's and early 1970's prompted the development of a unified federal policy for such use. Executive Order 11644 was issued in 1972 and Executive Order 11989 was issued in 1977 (Appendix A). They provided direction for federal agencies to establish policies and provide for procedures to control and direct the use of OHV's on public lands so as to (1) protect the resources of those lands, (2) promote the safety of all users of those lands, and (3) minimize conflicts among the various uses on those lands. The BLM and FS have developed regulations in response to the Executive Orders (43 CFR 8342 and 36 CFR 219 and 295). Under those regulations, OHV use can be restricted or prohibited to minimize (1) damage to the soil, watershed, vegetation, or other resources of the public lands; (2) harm to wildlife or wildlife habitats; and (3) conflict between the use of OHV's and other types of recreation.

Implementation of the Executive Orders by the BLM and FS has been reviewed (1995, General Accounting Office, Information on the Use and Impact of Off-Highway Vehicles; 1991, Department of Interior's Inspector General report on BLM's management of OHV activities; 1986, Forest Service review of its OHV program; and the 1979 Council on Environmental Quality review of Off-road Vehicles on Public Land).

The BLM and FS recognize in their respective resource management plans and forest plans, policy, and manual direction, that off-highway vehicle use is a valid recreational activity when properly managed. Managing this use along with other recreation uses and the need to protect resource values has become increasingly more difficult with increasing public demands and decreasing budgets.

PURPOSE AND NEED

Purpose

The purpose of this EIS/plan amendment is to address the impacts of wheeled (motorcycles, four-wheel drive vehicles, sport utility vehicles, all-terrain vehicles, etc.) off-highway vehicle travel on open areas that are currently available to motorized cross-country travel. It will amend forest plan and resource management plan OHV area designations to preserve future options for site-specific travel planning. This would provide timely interim direction that would prevent further resource damage, user conflicts, and related problems, including new user-created roads, associated with motorized cross-country travel until subsequent site-specific travel planning is complete. Site-specific travel planning, or activity planning, will address OHV use on specific roads and trails. This amendment would not change the current limited/restricted yearlong or closed designations, or designated intensive off-road vehicle use areas.

Pickup trucks are considered OHV's.

Need

About 16 million acres of public land are currently available to motorized cross-country travel in the analysis area, either yearlong or seasonally, which has the potential to:

- Spread noxious weeds,
- Cause erosion,
- Damage cultural sites,
- Create user conflicts, and
- Disrupt wildlife and damage wildlife habitat.

Problems do not occur equally throughout the analysis area. Motorized cross-country travel is generally limited by current technology to areas that are less steep and have more open vegetative communities. Random use in open areas has created trail networks throughout the analysis area. Some of this use has occurred in riparian areas and on highly erodible slopes.

Monitoring of OHV travel at FS and BLM offices indicates that problems exist where unrestricted motorized cross-country travel is allowed. Many units have completed or begun site-specific travel planning. Most notable efforts are the Elkhorn Mountains near Helena, Montana and the Whitetail-Pipestone area near Butte, Montana.

Members of the public and the Montana Fish, Wildlife and Parks Commission have shared their concerns about unrestricted OHV travel on public lands. The four BLM Resource Advisory Councils (citizen groups that represent

OHV damage in meadow, Beaverhead-Deerlodge National Forest.

a balance of commodity, conservation and other public interests) in Montana, North Dakota, and portions of South Dakota, expressed serious concerns about allowing continued, unrestricted, motorized cross-country travel on public lands. They suggested changing the open or unrestricted designations that allow for cross-country travel to designations that are more limited.

The BLM and FS are concerned that continuing unrestricted use could potentially increase these problems. Areas that are open yearlong to motorized cross-country travel in current forest plans and resource management plans will require a plan amendment to address these issues. This proposal to manage the cross-country aspect of motorized vehicle use is part of our responsibility as public land managers to balance human use with the need to protect natural resources.

A number of land management activities, including other recreational activities, may cause some of the same impacts described above. Activities such as horseback riding, mountain biking and hiking can all lead to similar impacts. However, many of these impacts can and are being reduced at site-specific areas. For example, on all FS and BLM lands in North Dakota and Montana it is required to use certified weed seed free hay, straw, whole grains and cubed products to prevent the spread of noxious weeds. The FS and BLM have trail improvement programs that help minimize the impact of erosion created by hikers and horse traffic in heavily used areas. User conflicts between mountain bikes, horses and hikers are being managed in heavily used areas such the Rattlesnake National Recreation Area near Missoula, Montana.

The FS Natural Resource Agenda has established a number of goals for maintaining, restoring the health, diversity, and productivity of the land, which include: protect and restore the settings of outdoor recreation, determine the best way to access the national forest, reduce impacts of our existing road system, restore watersheds and provide an avenue to collaborate with communities, the private sector and other agencies. This EIS/plan amendment will help initiate and address several of those goals.

The BLM has established standards that describe conditions needed to sustain rangeland health (BLM 1997). They address upland soils and watersheds, riparian and wetland areas, plant and animal communities, special status species, and water and air quality. Management of OHV use will help achieve those standards.

SCOPE OF THE ANALYSIS

The draft EIS/plan amendment is intended to be a programmatic document with a level of specificity and analysis that is broad in nature covering three states and two agencies. The BLM and FS lands affected by this proposal are those lands currently open yearlong or seasonally to motorized cross-country travel (Table 1.3 and Map 1). Since this is a programmatic EIS, effects are estimated for the three-state area. The quantified effect levels in this draft EIS should be considered relative, not absolute. These effects were conservatively estimated to provide a basis for comparison and choice among the alternatives.

Table 1.3 The Affected Environment (Acres)

Agency	*Open Yearlong*	*Open Seasonally*	*Total*
BLM	4,959,771	886,949	5,846,720
FS	6,244,448	3,847,460	10,091,908
Total	11,204,219	4,734,409	15,938,628

The analysis area was chosen because it aligns well with the BLM Montana State Office jurisdictions and fairly close with the Northern Region of the FS without splitting state boundaries significantly.

After the plan amendment is completed, the BLM and FS would continue to develop site-specific travel planning for geographical areas (i.e., landscape analysis, watershed plans, or activity plans). Through travel planning, roads and trails would be inventoried, mapped and designated as open, seasonally open or closed. In addition, site-specific travel planning may identify areas for additional trails, trail improvement, or specific areas where motorized cross-country travel may be appropriate. At this time, integration of other resource objectives and other types of recreational use would be incorporated.

ISSUES

An issue is a concern, dispute, or debate about the environmental effects of an action. They are identified through the scoping process with the public, other agencies, and internal review. A summary of the scoping process can be found in Chapter 4.

Primary Issues

Five primary issues were identified that reflect concerns or conflicts, which could be partially or totally resolved through the EIS process. These issues are:

- Need for plan amendment,
- Exceptions,
- Enforceability,
- Flexibility, and
- Identified problems.

While these five issues are by no means the complete list of concerns identified during the public scoping, these issues did help guide the development of the alternatives. The following discussion provides a brief summary of these issues.

Need for Plan Amendment : Some of the public expressed concern that the proposal is not needed or is too restrictive. Of particular concern was the need for off-highway vehicle decisions to be made at the local level rather than for a three-state area. Others expressed concern that the proposal was not restrictive enough and the agencies could not wait 10 to 15 years to complete site-specific travel planning.

Exceptions: Some of the public expressed concerns of whether or not exceptions for motorized cross-country travel should be allowed. These include camping, disabled access, game retrieval, BLM and FS administrative use, and effects on existing lessees and permittees. Some are concerned that the general public is unfairly constrained while special uses are not constrained. Other concerns are that exceptions are confusing and lead to abuse and enforcement problems. Additional concerns include the need to provide camping for dispersed recreation users and the need to allow for game retrieval in isolated areas.

Enforceability: Some of the public expressed concerns that the proposal needs to be enforceable and provide consistency between the two agencies. The proposal also needs to provide implementation of the Executive Orders and regulations pertaining to off-highway vehicles. This should include education and signing.

Flexibility: Some of the public expressed concerns that the proposal needs to be flexible and allow motorized cross-country travel or allow exceptions under certain conditions. The proposal needs to look at seasonal, rather than yearlong restrictions, when problems are occurring. The proposal should only address problems where they occur.

Identified Problems: Some of the public expressed concerns that the proposal needs to look at the trend in identified problems to stop further adverse effects of motorized cross-country travel. Concerns have also been raised that the agencies do not have justification for the proposal and should only look at areas with specific problems.

Resource Issues

A number of issues were brought up that were important for the analysis. In a general sense, these issues have been defined in the "Need" section above. Details of the effects on specific resources have been addressed in Chapter 3, the Affected Environment and Environmental Consequences. They are listed as follows:

What are the effects of OHV travel in open and seasonally open areas on public land on:

- Scenery and aesthetics,
- Other forms of recreation (user conflicts),
- Noise pollution and serenity for other recreation users,
- Inventoried Roadless, Recommended Wilderness, and Wilderness Study Areas,
- Economics of recreation opportunities,
- Cultural resources and tribal use,
- The spread of noxious weeds,
- Threatened, endangered and sensitive species; wildlife habitat; wildlife habitat effectiveness; and wildlife displacement,
- Water quality, soil erosion, wetlands and riparian areas, and
- Air quality.

Other Issues

A number of other issues were also raised during the scoping process that needed to be addressed. A brief discussion of how the issue is addressed in this draft EIS/ plan amendment is given after each issue.

Are current laws and regulations adequate to provide for OHV use and provide for protection of other resources?

Numerous comments revolved around whether there is an existing problem and suggest that existing laws and regulations are adequate to protect other resources. However, other commenters suggested that the current laws and regulations are inadequate. Details of the effects on specific resources are provided in Chapter 3.

What are the effects of further OHV travel restrictions on personal freedom and right to access public land?

Many comments indicated that the agencies have already restricted motorized use too much. It is not clear whether many of the commenters understood that the proposed action did not propose closing existing roads or trails. Many of our regulations and policies recognize the importance of access to public lands through both motorized and nonmotorized means. The decision in this EIS/plan amendment will not address overall access management needs but will attempt to address the regulations resulting from Executive Orders 11644 and 11989 which authorized land management agencies to manage OHV travel in a way that protects public resources, promotes safety and minimizes conflicts with other uses. Access management needs will be addressed at the site-specific level.

How can a one-size-fits-all decision work for a three-state area?

Many commenters felt that each state was different enough that one decision could not meet the needs of all three states and that the decision needed to be done at the site-specific local level. Due to the widely distributed land patterns common to the BLM and FS, the agencies recognize that many of our users come from many different locations and do not differentiate between BLM and FS lands. Therefore, we want to provide consistency across all public lands for our users. The analysis area was also chosen because it aligns well with the BLM Montana State Office jurisdictions and fairly close with the Northern Region of the FS without splitting state boundaries significantly.

How will site-specific problems be addressed soon enough with a 10-15 year window for completion of site-specific travel planning?

The agencies recognize that problems are not occurring on every site throughout the planning area. The BLM and FS will continue to develop site-specific travel plans (watershed plans or activity plans) for priority areas based on factors identified in Appendix B. All national forests/grasslands within the Northern Region will address access and OHV management during forest plan revisions in the next 2-4 years (the Dakota Prairie Grasslands currently has a draft Forest Plan Revision).

Existing authorities under the Code of Federal Regulations (CFR) will continue to be used in site-specific cases where conditions warrant closure of areas or trails that are not meeting the intent of Executive Orders 11644 and 11989.

How will the decision affect the North Dakota and South Dakota state section line laws and R.S. 2477?

Under this proposal, motorized cross-country travel would not be allowed. Our proposal would not diminish any rights under Revised Statute 2477 (R.S. 2477). The Secretary of the Interior has requested that the BLM not process any R.S. 2477 assertions until such time as the Department completes final rulemaking on the statute. The FS has had a moratorium against processing any R.S. 2477 assertions since September 25, 1997. This proposal also would not change or preclude the opportunity for future county infrastructure needs.

How will the decision affect the status of user-created roads and trails?

Many comments indicate that all user-created roads and trails in areas allowing motorized cross-country travel are illegal and that the proposal would validate them. The FS and BLM have a number of authorities that allow them to manage OHV's and user-created roads and trails under the CFR.

For the FS, under 36 CFR 261.10a, construction, placing or maintaining any kind of road or trail is prohibited without a special use permit. These regulations are used when there is willful or criminal intent to build roads or trails on public land. In areas that allow motorized cross-country travel, the creation of trails through repeated use is generally not considered criminal or willful unless construction or maintenance activities are occurring.

For the BLM, in areas that allow motorized cross-country travel, the creation of roads or trails through repeated use is generally considered casual use. Casual use means activities involving practices that do not ordinarily cause any appreciable disturbance or damage to the public lands. However, to construct or maintain a road or trail on public land requires a right-of-way or temporary use permit.

Roads and trails that are constructed or maintained without a permit will continue to be closed. The alternatives considered in this draft EIS/plan amendment will not change the status of roads and trails in open areas that are currently in use. However, until inventory is completed under site-specific travel planning, these roads and trails will remain as unclassified until it is determined that they should become a part of the BLM and FS permanent road and trail system or need to be permanently closed. Under the proposal, no new user-created roads or trails could be established.

Other regulations do apply to off-highway use. Regulations such as 36 CFR 219 and 295 for the FS and 43 CFR 8340

for the BLM, have given the agencies the authority and direction to plan, monitor and manage the use of off-road vehicles on public land. If vehicles traveling off road or trail are adversely affecting soil, water, wildlife, vegetation, or are causing user conflicts, the agencies have the authority to immediately close areas or trails. This authority has been used over the years in a number of areas but is generally done through site-specific travel planning with public involvement.

How will the decision affect the 40"/50" rule for OHV's?

Comments were made on the FS policy of allowing motorized vehicles less than 50" wide to travel on trails. The "50-inch" policy only applies to Forest Development Trails, commonly called "System Trails." The EIS/plan amendment does not address specific trails. Rather, it addresses motorized cross-country travel; therefore, the 50-inch rule for trails is not addressed. Specific types of use will be addressed during site-specific travel planning.

What is an existing road or trail?

This EIS/plan amendment addresses motorized cross-country travel. The definition of what is and is not considered as motorized cross-country travel is in Chapter 2.

How will the decision affect existing permits and leases?

The public brought up both sides of this issue. Many felt that leaseholders need to be restricted in the same manner as recreational users, while others did not. Access allowed under the terms and conditions of a federal lease or permit would not be affected by the proposal, however, other alternatives have been considered in the draft EIS/plan amendment. Details of the effects are provided in Chapter 3.

How will the decision be implemented and how will roads and trails be signed?

Many commenters made recommendations on whether to sign designated roads as open or to sign designated roads as closed. The action alternatives do not designate specific roads and trails and therefore will require minimal signing. Some informational signing will be needed. Maps will have to be revised indicating the change in areas that are currently unrestricted for motorized cross-country travel to travel only on roads and trails that currently exist on the ground (Appendix C). Specific signing of designated roads and trails will be done under site-specific travel planning. Chapter 2 describes each alternative and how the decision will be implemented.

PLANNING CRITERIA

Planning criteria have been developed to ensure that plan amendments would be tailored to the issues identified and to ensure that unnecessary data collection and analysis would be avoided. These criteria may change in response to public comment and coordination with state or local governments and other federal agencies. The criteria are described below.

- A change in management direction would be accomplished through an interagency EIS/plan amendment. The BLM and FS are joint lead agencies in preparation of the EIS/plan amendment.
- The plan amendment would not change most of the CFR designations of current limited/restricted or closed, or designated intensive off-road vehicle use areas.
- Exceptions for travel off roads and trails will be considered in the process for activities such as game retrieval, camping, and disabled access.
- Off-highway vehicle access allowed under the terms and conditions of a federal lease or permit would not be affected by the proposal.
- This proposal addresses wheeled motorized vehicles, and snowmobile use will not be addressed. To do so would complicate and lengthen the EIS process significantly.
- Travel planning currently under consideration at individual BLM and FS offices will continue and those analyses will remain in place under the proposal.

RELATIONSHIP TO OTHER PLANS, DECISION DOCUMENTS AND REGULATORY AUTHORITY

Direction and authority for the proposal come from the National Forest Management Act (NFMA), the National Environmental Policy Act (NEPA), the Federal Land Policy and Management Act (FLPMA), and the Council on Environmental Quality (CEQ). NFMA, NEPA, FLPMA and CEQ provide general land management and environmental analysis direction. Executive Orders 11644 and 11989 have given the BLM and FS the authority to manage off-highway vehicle use. The Code of Federal Regulations (CFR) 36 CFR 219 and 295 for the FS and 43 CFR 8340 for the BLM provide specific regulations for the agencies based on the Executive Orders.

DECISIONS TO BE MADE

The FS Regional Forester's and BLM State Director's decision to implement an alternative will be documented in a Record of Decision. They will decide one of the following: (1) whether or not to implement OHV restrictions as described in the Alternatives; or (2) choose a modified alternative (that would be described in the final EIS).

CHAPTER 2: DESCRIPTION OF THE ALTERNATIVES

INTRODUCTION

This chapter presents the No Action Alternative and four other alternatives for management of off-highway vehicles (OHV) on public land administered by the Bureau of Land Management (BLM) and National Forest System lands administered by the Forest Service (FS) Northern Region in Montana, North Dakota, and portions of South Dakota. The BLM and FS lands affected by this proposal are those lands currently open yearlong or seasonally to motorized cross-country travel.

This chapter is presented in five sections: Alternatives Eliminated From Detailed Study; Management Common to All Alternatives; Alternatives Considered in Detail; Identification of the Preferred Alternative; and Comparison of Alternatives.

ALTERNATIVES ELIMINATED FROM DETAILED STUDY

The following alternatives were eliminated from detailed study because they do not meet the purpose and need and/or due to technical, legal, or other constraints.

Forest Service Development Roads and Trails and BLM Designated Routes

One alternative was to restrict OHV's to FS development roads and trails and BLM designated routes.

This alternative was eliminated from detailed study because it does not meet the purpose and need of this proposal. The purpose and need of this proposal are to amend forest plan and resource management plan OHV area designations to preserve future options for travel management and provide timely interim direction that would prevent further resource damage, user conflicts, and related problems, including new user-created roads and trails, associated with cross-country OHV travel until subsequent site-specific travel planning is complete. Site-specific travel planning, or activity planning, will address OHV use on specific roads and trails.

This environmental impact statement (EIS) and plan amendment is intended to be programmatic in nature with the level of specificity and analysis that is broad in nature covering three states and two agencies. An analysis of FS development roads and trails and BLM designated routes could potentially delay the final decision by several years. To meet the purpose and need of this proposal, the decision needs to be timely and the level of analysis needs to be commensurate with a broad level document of this type. Adequate data is not available to assess the impacts of closing significant amounts of nonforest development and BLM nondesignated roads and trails across the entire three-state analysis area. Within the timeframe of one year to meet our objective of preventing further resource damage, it would not be feasible or workable to develop a comprehensive site-specific analysis across a three-state area. It would be difficult to adequately assess impacts to recreation use or impacts to other resources that would justify significant road or trail closures that this alternative would entail.

In areas that allow motorized cross-country travel, the creation of roads and trails has occurred through repeated and casual use. These roads and trails created by casual use are not considered illegal. Some user-created roads and trails have been in use since the turn of the century, long before existing forest plans and BLM resource management plans. The agencies do recognize that with the increase of OHV's in the last 15 years, the miles of user-created roads and trails have increased. The agencies also recognize that not all user-created roads and trails are causing resource problems. This alternative would immediately close all of these roads and trails with very little quantitative analysis justifying the closure. Only a site-specific inventory would enable the agencies to determine the impacts, suitability and appropriateness of each individual road or trail.

The magnitude of this road and trail inventory and the assessment of resource cumulative effects is extensive. The agencies believe that the alternatives analyzed in full detail in this draft EIS/plan amendment are commensurate with the effects found in the analysis area and within budgetary constraints. The analysis of an alternative that would restrict OHV's to FS development roads and trails and BLM designated routes is better done at a local level through travel and activity planning with a complete inventory, full public involvement, and integration of other resource objectives and other types of recreational use. In order to insure that site-specific travel planning is completed on the most critical areas, a method of prioritizing site-specific travel planning activities and a monitoring plan are described in Appendix B.

Planning for units of the National Forest System and for lands administered by the BLM involves two levels of

decisions. The first is the development or amendment of forest plans and resource management plans that provide management direction for resource programs, uses, and protection measures. The second level of planning involves the analysis and implementation of management practices designed to achieve goals and objectives of the forest plan and resource management plan. This is commonly referred to as project, activity, or site-specific planning.

Forest plans, resource management plans and associated amendments are intended to set out management area prescriptions or decisions with goals, objectives, standards, guidelines, terms, and conditions for future decision making through activity planning. The environmental analysis accomplished at the plan amendment level guides resource management decisions on public lands and aids, through the tiering process, environmental analyses for more site-specific proposals. This alternative, because of its site-specific requirements, would better fit into the second level of planning.

During the past 15 years, a significant group of motorized recreationists increasingly have used nonforest development and BLM nondesignated roads and trails as a family recreational activity. The user-created roads and trails can legally be driven by unlicensed and nonstreet-legal all-terrain vehicles (ATV's) and motorcycles. Impacts to recreationists are quite extreme with this alternative. Current State laws require ATV's and motorcycles to be street legal and driven by licensed drivers if they are to be operated on public roads. This alternative would limit ATV and motorcycle use by unlicensed drivers with nonstreet-legal vehicles to only forest development motorized trails on the national forests/grasslands throughout the three-state area.

Snowmobiles

One alternative was to include snowmobile use in the proposal.

This proposal addresses wheeled motorized vehicles such as motorcycles, ATV's, four-wheel drive vehicles, etc. Addressing snowmobile use in this proposal would complicate and lengthen the EIS process significantly. Since snowmobiles are usually driven on a layer of snow, their environmental effects are different than those of wheeled motorized vehicles, which come into direct contact with the ground. User conflicts associated with snowmobiles are also different than those with wheeled motorized vehicles.

This alternative was eliminated from detailed study because the issues involving snowmobile access are different enough to warrant a separate analysis, if necessary.

Site-Specific Alternatives

Several other alternatives were raised, such as identifying additional intensive use areas, establishing areas on a rotating basis, leaving areas open near larger urban areas, addressing hiking, horseback riding and mountain biking, or restricting roads and trails based on the width, horsepower, or weight of vehicles.

These alternatives would be a significant undertaking for the agencies. Like the FS development roads and trails and the BLM designated route alternative, they could not be completed and provide timely interim direction that would prevent further resource damage, user conflicts, and related problems with motorized cross-country travel.

Planning for units of the National Forest System and for lands administered by the BLM involves two levels of decisions. The first is the development or amendment of forest plans and resource management plans that provide management direction for resource programs, uses, and protection measures. The second level of planning involves the analysis and implementation of management practices designed to achieve goals and objectives of the forest plan and resource management plan. This is commonly referred to as project, activity, or site-specific planning.

Forest plans and resource management plans and associated amendments are intended to set out management area prescriptions or decisions with goals, objectives, standards, guidelines, terms, and conditions for future decision making through activity planning. The environmental analysis accomplished at the plan amendment level guides resource management decisions on public lands and aids, through the tiering process, environmental analyses for more site-specific proposals. This alternative, because of its site-specific requirements, would better fit into the second level of planning.

These alternatives, because of their site-specific requirements, clearly fall into the second level of planning when making project or activity level decisions. Through site-specific travel planning, or activity planning, specific areas where motorized cross-country travel is appropriate or intensive use areas could be identified and designated. The issues involving other uses on roads and trails (hiking, horseback riding, mountain biking) could be addressed through site-specific travel planning, and specific limitations for roads and trails (width or vehicle weight) could be identified.

Block Management

One alternative was to address the Montana Fish, Wildlife and Parks block management program in the proposal.

Block management is a cooperative program between private landowners and Montana Fish, Wildlife and Parks. Block management provides the public with free hunting access to private land, and sometimes to adjacent or isolated public lands. Block management addresses fall hunting only.

This alternative was eliminated from detailed study because the block management program is not within the discretion or authority of the BLM or FS.

Restrict Areas Greater Than 5,000 Acres and Close All Areas to Off-Highway Vehicle Use

One alternative was to restrict OHV's to small, isolated tracts of less than 5,000 acres. Another alternative was to close all areas to OHV's, including all roads and trails.

The BLM and FS recognize in their respective resource management plans and forest plans, policy, and manual direction, that off-highway vehicle use is a valid recreational activity. Resource conditions, including vegetation, watershed, and wildlife habitat, do not warrant prohibition of vehicle travel on all public lands, including all roads and trails.

Closed Unless Posted Open

One alternative was to close areas and post only the roads and trails open to motorized travel.

This alternative was eliminated from detailed study because it does not meet the purpose and need of this proposal. The purpose and need of this EIS/plan amendment are to prevent further resource damage, user conflicts, and related problems associated with motorized cross-country travel until site-specific travel planning is complete. This alternative would be a significant undertaking for the agencies. Like the FS development roads and trails and the BLM designated route alternative, this could not be completed and provide timely interim direction. Site-specific travel planning or activity planning would address OHV use on specific roads and trails. Through site-specific travel planning, roads and trails would be inventoried, mapped, and designated as open, seasonally open, or closed. Specific signing of designated roads and trails would be done under site-specific planning.

Montana State Lands Policy

One alternative was based on the State of Montana rules for recreational use of state lands. "Motorized vehicle use by recreationists on state lands is restricted to federal, state, and dedicated county roads and to those roads designated by the department to be open to motorized vehicle use." (77-1-804(6), Montana Code Annotated). Motorized cross-country driving is prohibited.

The alternatives developed and addressed in this draft EIS/plan amendment would prohibit motorized cross-country travel similar to Montana rules. In addition, the alternatives would limit travel to roads and trails, including federal, state, and county roads. However, the designation of roads and trails open, seasonally open, or closed to motorized vehicle use will be accomplished through site-specific travel planning as discussed above in the section "Forest Service Development Roads and Trails and BLM Designated Routes." Designation of specific roads and trails is a significant undertaking and cannot be done in the interim in a timely fashion. The purpose and need of this EIS/plan amendment is to prevent further resource damage, user conflicts, and related problems associated with motorized cross-country travel until site-specific travel planning is complete.

MANAGEMENT COMMON TO ALL ALTERNATIVES

The following management guidance will continue, regardless of which alternative is selected, and is common to all alternatives.

The BLM and FS regulations (43 CFR 8341.2 and 36 CFR 295.2 and 295.5) allow for area and road or trail closures where off-road vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, threatened or endangered species, other authorized uses, or other resources. The authorized officer can immediately close the areas affected by the type of vehicle causing the adverse effect until the effects are eliminated and measures are implemented to prevent future recurrence.

Forest Service land management plans in the Northern Region are scheduled to be revised in two to four years. Forest plans must be revised at least every 15 years. These plan revisions will address travel management.

The BLM's resource management plans have no revision schedule but can be amended or revised. An amendment is initiated by the need to consider the findings from monitoring and evaluation, new data, new or revised policy, or a change in circumstances significantly affecting a part of the approved plan. If changes in the planning area affect major portions of the plan or the entire plan, a complete revision may be necessary.

After the plan amendment is completed, the BLM and FS would continue to develop travel management plans for geographical areas (i.e., landscape analysis, watershed plans, or activity plans). Through travel planning, roads and trails would be inventoried, mapped, analyzed, and designated as open, seasonally open, or closed. In addition, site-specific travel planning could identify areas for trail construction and/or improvement, or specific areas where cross-country travel may be appropriate. Implementation and monitoring are described in Appendices B and C.

Definition of Motorized Cross-Country Travel

All action alternatives have areas that prohibit cross-country travel either seasonally or yearlong. The objective of Alternatives 1-4 is to prevent further resource damage by eliminating further expansion of motorized routes. To meet this objective it is also necessary to prevent widening the existing profile from motorized use. This definition is not intended to supersede road and trail motorized vehicle restrictions regulating type of vehicle or season of use.

The following defines where motorized travel is considered cross-country:

Cross-country travel is motorized travel off roads and trails.

- *The passage of motorized vehicles depressing undisturbed ground and/or crushing vegetation is considered cross-country (Figure 2.1).*

- *Motorized use on livestock and game trails is considered cross-country travel unless they meet the definition or examples (Figure 2.2).*

The following defines where motorized travel is not considered cross-country:

Motorized travel on agency constructed roads and trails (often characterized by a road or trail prism with cut and fill slopes) that are maintained by the agencies.

Motorized travel on clearly evident two-track (two parallel wheeled vehicle tracks) and single-track routes established by the regular use and continuous passage of motorized vehicles. Motorized routes not constructed and maintained by the agencies are considered unclassified or nondesignated and will remain so until site-specific travel planning is completed. Routes may take the form where perennial vegetation is devoid or scarce or where wheel tracks are depressions in the ground but are vegetated (Figure 2.3).

- *The motorized vehicle maximum width (the distance from outside of left tire to outside of right tire or maximum tire width for motorcycles) must easily be accommodated within the existing profile (Figure 2.4, 2.5, 2.6).*

- *Routes must meet the above definitions for their continuous length. Routes newly created under wet conditions or in meadow and riparian areas should be easily identified as not meeting the definition because many portions of the route from its beginning to its terminus would not show signs of "regular and continuous passage of motor vehicles" and many areas would still be fully vegetated with no wheel depressions.*

Figure 2.1 ATV traveling cross-country.

Figure 2.2 Motorized use on livestock trails is considered cross-country travel.

Figure 2.3 Routes may take the form where wheel tracks are depressions in the ground but are vegetated.

Figure 2.4 Motorcycle traveling on single track trail - appropriate use.

Figure 2.5 ATV traveling on single track trail - inappropriate use.

Figure 2.6 Pickup truck traveling on two-track trail - inappropriate use.

ALTERNATIVES CONSIDERED IN DETAIL

This section describes the No Action Alternative and four other alternatives for management of OHV's on public lands. All alternatives comply with the Federal Land Policy and Management Act (FLPMA) of 1976, the National Forest Management Act (NFMA) of 1976, and are subject to compliance with all valid statutes on public land and National Forest System lands administered by the BLM and FS. Impacts of all resources are considered through the National Environmental Policy Act (NEPA) of 1969.

No Action Alternative (Current Management)

This alternative would continue current direction and is used as the baseline condition for comparing the other alternatives. Field units would continue to manage OHV's using existing direction and regulations. It addresses a number of issues and concerns such as the proposed action is too restrictive and effects on the ground do not warrant any change. It also addresses the concern that it is unrealistic to provide consistent management of OHV's across a three-state area due to wide variations of issues and problems that would necessitate management decisions to be made at a local level. The No Action Alternative also maintains for the current time the most flexibility in allowing for game retrieval, disabled access, camping, administrative use and least effect on permittees and lessees.

Areas currently open yearlong or seasonally to cross-country travel would remain open (Table 2.1 and Map 1).

Site-specific travel planning and enforcement of OHV regulations would occur at current levels.

Table 2.1 Areas Open Yearlong or Seasonally to Cross-Country Travel (Acres)

Agency	*Open Yearlong*	*Open Seasonally*	*Total*
BLM	4,959,771	886,949	5,846,720
FS	6,244,448	3,847,460	10,091,908
Total	11,204,219	4,734,409	15,938,628

Alternative 1

Alternative 1 is the most restrictive alternative for management of OHV's in that no motorized cross-country travel would be allowed with few exceptions. This alternative has been developed to address concerns that OHV use needs to be restricted very quickly and is long overdue because of resource impacts and user conflicts. Concerns addressed were to stop the expansion of problems associated with the spread of noxious weeds, user conflicts, wildlife harassment and habitat alteration, effects on soils and aquatic resources, and further deterioration of FS inventoried roadless, recommended wilderness and Montana wilderness study areas. Alternative 1 best meets the concern for consistency on OHV management between BLM and FS lands and would be the most easily enforceable alternative because of consistency and few exceptions.

The BLM and FS would prohibit motorized cross-country travel yearlong (Map 1). These lands, approximately 15.9 million acres, would be designated limited or restricted yearlong under the BLM or FS regulations (43 CFR 8342 or 36 CFR 295). The appropriate forest plan and resource management plan would be amended by this alternative.

Motorized cross-country travel would be allowed for any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes.

Motorized cross-country travel for BLM and FS official administrative business would not be allowed without prior approval by the authorized officer.

Motorized cross-country travel for lessees and permittees to administer federal leases or permits would not be allowed unless specifically authorized under the lease or permit.

Motorized cross-country travel would not be allowed for the retrieval of a big game animal.

Motorized cross-country travel would not be allowed for individuals with disabilities.

Motorized cross-country travel would not be allowed for firewood and Christmas tree cutting.

The following exception would apply:

> Motorized cross-country travel for camping would be permissible within 50 feet of roads and trails by the most direct route after site selection by nonmotorized means.

Alternative 2 (Preferred Alternative)

This alternative is based on the proposal during scoping and is the preferred alternative. It prohibits cross-country travel throughout the analysis area but allows for a few exceptions for relatively infrequent activities. Similar to Alternative 1, concerns addressed were to stop the expansion of problems associated with the spread of noxious weeds, user conflicts, wildlife harassment and habitat alteration, effects on soils and aquatic resources, and further deterioration of FS inventoried roadless, recommended wilderness and Montana wilderness study areas. It meets the concern that the agencies need to allow for some exceptions for cross-country travel such as game retrieval, camping, and disabled access. Initially, it would also have no effect on existing leases and permits, however, cross-country travel could be restricted based on site-specific analysis. It provides almost the same ease of enforcement and consistency between the two agencies as Alternative 1. It also provides the widest range of game retrieval opportunities that meet recreationist concerns, provide consistency, and minimize effects to other resources.

The BLM and FS would prohibit motorized cross-country travel yearlong (Map 1). These lands, approximately 15.9 million acres, would be designated limited or restricted yearlong under the BLM or FS regulations (43 CFR 8342 or 36 CFR 295). The appropriate forest plan and resource management plan would be amended by this alternative.

Motorized cross-country travel would be allowed for any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes.

Motorized cross-country travel for BLM and FS official administrative business would be allowed.

Motorized cross-country travel for lessees and permittees to administer federal leases or permits would be allowed, unless specifically prohibited in the lease or permit. This would not change any existing terms or conditions in current leases or permits. However, this would not preclude modifying cross-country travel based on this plan amendment and further site-specific analysis.

The following exceptions would apply:

1. Motorized cross-country travel for camping would be permissible within 300 feet of existing roads and trails by the most direct route after site selection by nonmotorized means.

2. Motorized cross-country travel by the most direct route would be allowed to retrieve a big game animal that is in possession only in the following field units in Montana: Miles City Field Office (FO), Billings FO, Malta FO, Lewistown FO with the exception of the Great Falls Field Station, and the Custer National Forest with the exception of the Beartooth Ranger District. Motorized cross-country travel in all other areas would not be allowed to retrieve a big game animal. In some areas big game retrieval could be modified through subsequent travel planning.

3. Motorized cross-country travel could be permitted at the local level (BLM Field Office or FS Ranger District) for persons with disabilities.

4. Motorized cross-country travel for firewood and Christmas tree cutting could be permitted at the local level (BLM Field Office or FS Ranger District).

The following mitigation measures would apply:

1. Motorized cross-country travel for BLM and FS official administrative business would not be allowed in known western prairie fringed orchid habitat on the Sheyenne National Grassland in eastern North Dakota without prior approval.

2. Motorized cross-country travel for lessees and permittees to administer federal leases or permits would not be allowed in known western prairie fringed orchid habitat on the Sheyenne National Grassland in eastern North Dakota without prior approval.

Alternative 3

This alternative is based on the concern that the agencies should not restrict OHV use where problems do not occur or where existing regulations are adequate. Lands in the Flathead, Kootenai and Bitterroot National Forests in western Montana would not be affected by this alternative (Map 2). Preliminary analysis indicated that even though a significant amount of federal lands were open to motorized cross-country travel in western Montana, current technology of OHV's generally has limited the expansion of user-created routes because of relative steepness and vegetation. Concerns for the need to restrict OHV's in the remainder of the analysis area are similar to Alternative 2. Concerns addressed were to stop the expansion of problems associated with the spread of noxious weeds, user conflicts, wildlife harassment and habitat alteration, effects on soils and aquatic resources, and further deterioration of FS inventoried roadless, recommended wilderness and Montana wilderness study areas. It meets the concern that we need to allow some exceptions for cross-country travel such as game retrieval, camping, disabled access. Initially, it would also have no effect on existing leases and permits, however, cross-country travel could be restricted based on site-specific analysis. Game retrieval was modified to reduce user conflicts by restricting the activity from 10:00 a.m. until 2:00 p.m.

The BLM and FS would prohibit motorized cross-country travel yearlong in the Miles City FO, Billings FO, Malta FO, Lewistown FO, Butte FO, Dillon FO, South Dakota FO, North Dakota FO, Beaverhead-Deerlodge NF, Custer NF, Dakota Prairie Grasslands, Gallatin NF, Helena NF, and the Lewis and Clark NF (Map 2). Approximately 12.5 million acres would be designated limited or restricted yearlong under the BLM or FS regulations (43 CFR 8342 or 36 CFR 295). The appropriate forest plan and resource management plan would be amended by this alternative.

Motorized cross-country travel would be allowed for any military, fire, emergency, or law enforcement vehicle while being use for emergency purposes.

Motorized cross-country travel for BLM and FS official administrative business would be allowed.

Motorized cross-country travel for lessees and permittees to administer federal leases or permits would be allowed, unless specifically prohibited in the lease or permit. This would not change any existing terms or conditions in current leases or permits. However, this would not preclude modifying cross-country travel based on this plan amendment and further site-specific analysis.

The following exceptions would apply:

1. Motorized cross-country travel for camping would be permissible within 300 feet of existing roads and trails by the most direct route after site selection by nonmotorized means.

2. Motorized cross-country travel by the most direct route would be allowed from 10:00 a.m. until 2:00 p.m. to retrieve a big game animal that is in possession. In some areas big game retrieval could be restricted further through subsequent travel planning.

3. Motorized cross-country travel could be permitted at the local level (BLM Field Office or FS Ranger District) for persons with disabilities.

4. Motorized cross-country travel for firewood and Christmas tree cutting could be permitted at the local level (BLM Field Office or FS Ranger District).

Alternative 4

This alternative addresses a number of issues and concerns (e.g., the proposed action is too restrictive and effects on the ground do not warrant any change) but restricts motorized cross-country travel to times that would have a lesser impact on other resources and minimize user conflicts. Motorized cross-country travel would be restricted to times when either the ground is generally frozen or during dryer periods to reduce impacts on soil, aquatic resource damage and to slow down the spread of noxious weeds and user-created routes. No motorized cross-country travel would be allowed for the majority of the big game seasons in all three states, with the exception of game retrieval, to minimize user conflicts and wildlife harassment. Game retrieval would be allowed in all formerly open areas in the analysis area. It meets the concern that we need to allow for some exceptions for cross-country travel such as game retrieval, camping, disabled access. Initially, it would also have no effect on existing leases and permits, however, cross-country travel could be restricted based on site-specific analysis. It provides almost the same ease of enforcement and consistency between the two agencies as Alternative 1 because the timing and exceptions are the same throughout the three-state area.

The BLM and FS would prohibit motorized cross-country travel seasonally (Map 1). These areas would be open to cross-country travel from June 15 to August 31 and from December 2 to February 15. These lands, approximately 15.9 million acres, would be designated limited or restricted seasonally under the BLM or FS regulations (43 CFR 8342 or 36 CFR 295). The appropriate forest plan and

resource management plan would be amended by this alternative.

Motorized cross-country travel would be allowed for any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes.

Motorized cross-country travel for BLM and FS official administrative business would be allowed.

Motorized cross-country travel for lessees and permittees to administer federal leases or permits would be allowed, unless specifically prohibited in the lease or permit. This would not change any existing terms or conditions in current leases or permits. However, this would not preclude modifying cross-country travel based on this plan amendment and further site-specific analysis.

The following exceptions would apply:

1. Motorized cross-country travel for camping would be permissible within 300 feet of existing roads and trails by the most direct route after site selection by nonmotorized means.

2. Motorized cross-country travel by the most direct route would be allowed to retrieve a big game animal that is in possession. In some areas big game retrieval could be restricted further through subsequent travel planning.

3. Motorized cross-country travel could be permitted at the local level (BLM Field Office or FS Ranger District) for persons with disabilities.

4. Motorized cross-country travel for firewood and Christmas tree cutting could be permitted at the local level (BLM Field Office or FS Ranger District).

IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The alternatives were reviewed for effectiveness in resolving the planning issues, conformance with the guidance established by the planning criteria, avoidance of unnecessary impacts to the human environment, responsiveness to public concern, and compliance with BLM and FS statutory authority and Executive Orders 11644 and 11989. Based on those reviews, Alternative 2 is the preferred alternative.

COMPARISON OF ALTERNATIVES

Table S.1 presents a summary of the alternatives and Table S.2 summarizes the environmental consequences for each alternative. These tables (located in the Summary section of this document) are summaries of the alternative descriptions contained in this chapter and the environmental consequences described in Chapter 3. The reader is referred to the text in these chapters for specifics and more detail about the information in the summary tables.

CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter describes the affected environment for each resource followed by environmental consequences for each of the alternatives evaluated in detail. The affected environment discussion describes the social and economic, biological and physical conditions of the analysis area. The intent is to characterize the current condition of each resource. The environmental consequences then address the direct, indirect, and cumulative impacts on the environment by each alternative. This chapter provides the scientific and analytic basis for the comparison of alternatives presented in Chapter 2.

The level of detail in this chapter includes information necessary to support and clarify the impact analysis. Descriptions of the existing environments and environmental effects by alternative were developed from reports prepared by resource specialists from the USDA Forest Service (FS) and USDI Bureau of Land Management (BLM).

ENVIRONMENTAL SETTING OF THE PROJECT AREA

The project area includes BLM and FS Northern Region administered lands in Montana, North Dakota and portions of South Dakota. The environmental setting of the project area can be described in three ecological regions: Rocky Mountain Region, Great Plains Region, and North American Prairie Region (Bailey 1995) (Figure 3.1).

The Rocky Mountain Region covers the mountainous area of western and portions of central Montana and is generally characterized by steep, rugged mountains separated by flat valley bottoms. These mountains consist of highly folded, faulted, intruded and uplifted sedimentary strata. The rocks that form these mountains are tens of millions to billions of years old. Formation of the Rocky Mountains began around 60 million years ago as the Mesozoic Era ended. By the early Eocene, 20 million years later, the crustal disturbances forming the mountains relaxed and mountain building ended.

Currently, the mountains are covered by conifer forests with grassland foothills. The forest types vary considerably ranging from dry ponderosa pine to moist western red cedar to cool spruce-fir types. Lodgepole pine and Douglas-fir dominated forests are common in this region. Elevation in this region ranges from 2,000 feet to greater than 11,000 feet. Geologically this area is diverse with bedrock that is igneous or sedimentary in origin. Soils have developed in place or have resulted from volcanic ash eruptions such as from Mount Mazama. Climatically the area has relatively cold winters with substantial amounts of precipitation coming in the form of snow with some rain in the spring and fall. Summers are typically dry. Annual precipitation ranges from 15 to 25 inches in the valleys and up to 100 inches in the mountains.

In marked contrast, the **Great Plains Region** is characterized by relatively gentle topography, rolling plains and tablelands with an important exception of areas referred to as "badlands." The relatively low relief indicates flat-lying bedrock. Horizontally bedded, undeformed, sedimentary strata underlie this region. Although the age of the underlying strata is comparable to that of the Rocky Mountain Region, only the youngest strata are visible at the surface. This region covers most of North Dakota, South Dakota, eastern Montana, and portions of central Montana.

The climate is semiarid with cold, dry winters and warm to hot and dry summers. Overall, annual precipitation ranges from 10 to 20 inches. The vegetation is short and mixed grass prairie, comprised of various species of grasses, forbs, cacti, sagebrush and rabbitbrush and a scattering of scrub trees in some areas. There is often bare soil between the plants.

The North American Prairie Region covers the very eastern edges of North Dakota and South Dakota. It has little topographical relief and ranges from 1,000 to 2,000 feet in elevation. Flat and rolling plains from glacial drifts and outwash plains characterize this region. The annual precipitation is 20 to 40 inches, with most of it coming during the growing season, thus drought is uncommon. Grasses dominate the vegetation, although deciduous forests will invade where grazing and fire have been excluded.

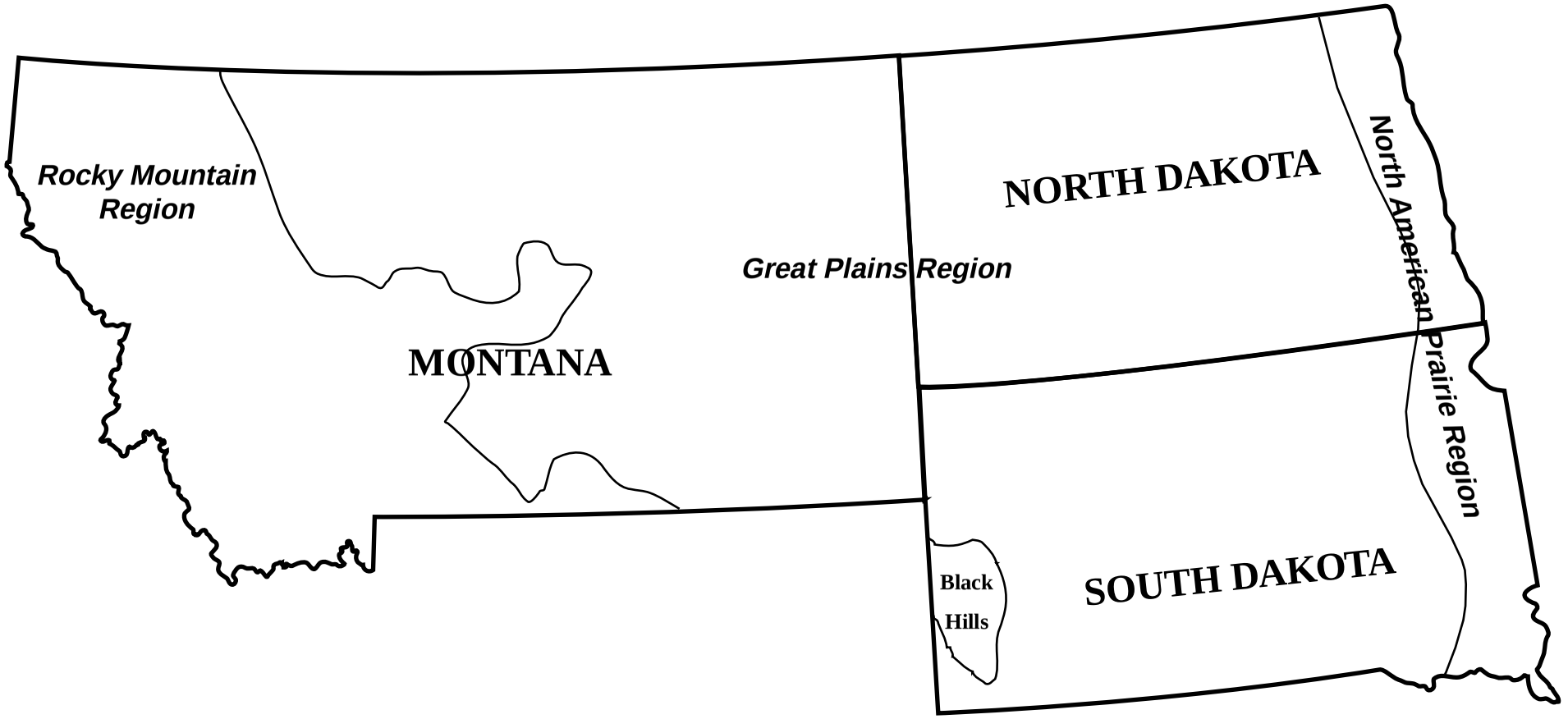
VISUALS AND RECREATION

AFFECTED ENVIRONMENT

Landscape Character

The three-state area includes three regional landscape character types: Rocky Mountains, Great Plains, and North

FIGURE 3.1
Ecological Regions



American Prairie. General landscape characteristics of each region have been described earlier in this chapter. Boundaries between adjoining regions are often an expression of transition from one set of visual characteristics to another, rather than a distinctive change. These broad character types are descriptive of the entire landscape regardless of ownership.

Rocky Mountain Region: Visually, in this region there is a strong interplay of texture and color created by the mosaic of trees, shrubs, grasses, stringers of meadows along stream courses within the forests, and stringers of trees or shrubs in the grasslands. The degree to which people have modified the natural landscape on federal lands varies from undeveloped wildlands to those heavily influenced by logging and mining. Broad valleys are usually in private ownership with farming and ranching creating a pastoral appearance. The overall image of the Rocky Mountain Region is variety in the landscape.

BLM and National Forest System (NFS) lands in the Rocky Mountain Region have an extensive network of roads and trails. Many were designed and constructed by the FS and BLM, but some were also created by users (ranchers, miners, hunters, loggers, and others) over the past one hundred years. Because of forest vegetation and topography, most of the user-created roads and trails are most evident in the foreground viewing areas.

Great Plains Region: Commonly, landscapes in the Great Plains Region provide the viewer with a sense of little or no boundary restriction. Visually contrasting with the natural setting, cultivated grain and fallow fields and narrow irrigated strips in incised valleys are additional pastoral features found on private lands in this region. This type of landscape does not lend itself well for visually absorbing human modifications such as roads that contrast with the natural appearing landscape. Eastern Montana, North Dakota and South Dakota NFS and BLM lands have an extensive road network consisting of designed and constructed routes and user-created routes, often called "two-track" roads or "prairie trails." Some of the user-created roads and trails have been around for more than a hundred years, while others are more recent. Many were created by motorized cross-country travel and few, if any, were designed to blend with the landscape. Some routes travel up steep slopes or follow ridgelines, adding unnatural lines and highly contrasting colors to the landscape. This is from field observation and the agencies have no data to determine the miles of new roads created each year or the miles of existing roads known as prairie trails.

North American Prairie Region: Extending from Texas to Alberta, the North American Prairie Region covers the mid and eastern portions of North Dakota and South Dakota. Much of the private land in this landscape has been cultivated for agriculture. Federal lands are generally not cultivated, though many acres are grazed by cattle. This region contains the Sheyenne National Grassland (now part of the Dakota Prairie Grasslands). There are no BLM lands in this region.

Visual Quality

The FS currently uses the Visual Management System (VMS) for assessing visual effects. Visual Quality Objectives (VQO's) are a measure of how natural a landscape appears, or would appear, under various management scenarios (USDA 1973 and 1974). Human alterations can sometimes raise or maintain visual quality within the landscape character, but more often it is lowered depending on the deviation from the natural appearing features of the character. The existing visual condition of national forests/grasslands presently varies from unaltered to heavily altered and meets VQO's of Preservation to Maximum Modification, depending on past development and use, and on the degree and type of management direction for Management Areas identified in the various forest plans. In forested areas, roads, timber harvest, mining, and winter sports sites have the most influence on visual quality. In grasslands, roads, recreation developments, fences, mining development and facilities, electronic sites and trails have the most influence on visual quality. Many of these same influences apply to lands above the timberline.

The BLM uses a slightly different system for classifying and managing scenery. BLM management objectives vary from Class I, preservation of the characteristic landscape, to Class IV, which allows for major modification of the landscape. All four classes are found on public lands in the analysis area. Some of the most visually sensitive of these lands are within view of major travel corridors such as highways and county roads. Depending upon location, user-created roads and trails sometimes do not meet management objectives, due to the difficulty of the Great Plains landscape in absorbing human impacts. Some public land visitors find the look of recent and some older roads and trails created by cross-country travel unsightly and objectionable.

Recreation

Outdoor recreation, which includes motorized use, is one of the purposes for which public lands managed by the FS and the BLM are administered. Motorized recreation, where appropriate, is a legitimate activity on public lands. Executive Order 11644 (1972), as amended by Executive Order 11989 (1977) Use of Off-Road Vehicles on the Public Lands, gives direction on providing motorized opportunities while protecting resources, promoting safety, and mini-

mizing conflicts with other users. At the time the Executive Orders were issued, cross-country motorized travel was not as prevalent as it is today, and many public lands were left open and unrestricted. Presently there are 5.8 million acres open to motorized cross-country travel on BLM lands and 10.0 million acres open on national forests/grasslands within the analysis area. With the surge in motorized use over the past decade, the effects of cross-country motorized travel are more apparent and causing concern expressed by many public land users.

Contributing to the boom in off-highway vehicle (OHV) use since the Executive Orders are the advancements in OHV technology and the rise in popularity of all-terrain vehicles (ATV's). Twenty-five years after the Executive Orders, the popularity of OHV's continues to increase, and with it the associated conflicts. Contributing to the problem are the large areas of public lands that are still classified as open (no restrictions for motorized off-road use) or that only have seasonal restrictions.

Recreation conflicts occur when participation in one recreation activity reduces the recreation experience of another user. Recreation conflicts resulting from motorized cross-country travel take several forms. Conflicts are usually between the motorized and nonmotorized recreationists. In areas that are open to motorized cross-country travel during the hunting season, the conflict is between motorized hunters who travel cross-country to scout for game, access favorite hunting areas, drive or chase game for a better shot and to retrieve game, and nonmotorized hunters whose method of access, scouting, stalking, and retrieval are by foot or horse. Part of the conflict is the noise created by motorized vehicles that may disturb game animals and displace them from the immediate area. Motorized cross-country travel on public lands can also push big game animals onto adjacent private lands that are posted and off limits to the general public.

Most nonmotorized recreationists are usually seeking quiet-type recreation experiences and feel the noise, exhaust fumes, and wheel tracks left behind from motorized cross-country travel conflict with and reduce the quiet, more primitive recreation experience they are seeking.

Many motorized recreationists who stay on roads and trails feel that those who travel cross-country on motorized vehicles are not practicing good land ethics (Tread Lightly! principles, Appendix D) and give the entire group of motorized recreationists a bad name.

Settings

National forests/grasslands are mostly large blocks of public lands with reasonable public access. Often within these blocks of public land are intermingled private lands and other state and federal ownerships. BLM lands, on the other hand, are very often widely scattered tracts separated by great distances. Some larger blocks of BLM lands do occur. Motorized access to BLM lands is often limited by surrounding private lands, rather than by a lack of roads or trails. Some recreationists drive cross-country to avoid private land if there are no fences and the terrain permits. The BLM estimates that most motorized use in eastern Montana, North Dakota and South Dakota occurs on roads and trails, rather than cross-country. Based on field observations, new two-tracked roads are formed as more private lands adjacent to BLM lands are closed to the public.

National forests/grasslands and BLM lands provide very diverse recreation settings. Differences in landform, climate, and elevation create physical settings that include open rolling grasslands, badlands, plateaus and tablelands, grass/shrublands, open timber/grass foothills, floodplains and riparian areas, wet meadows, luxuriant dense forests, craggy mountains, narrow to broad valleys, glaciated cirque basins, and high mountain lakes. Settings vary from urbanized environments to large, unmodified areas.

Social settings reflect the amount and frequency of contact between individuals and groups. Social settings on federal lands are varied; recreationists may find solitude in areas where there are few other people or encounter large numbers of people in heavily used or concentrated use areas. Encounters with others vary depending on the season of use, the attractiveness of the area, the proximity to population centers, and the particular recreation activity.

Road and trail densities on public lands that are open yearlong or seasonally to motorized cross-country travel vary. For example, the Whitetail-Pipestone area, a popular area for riding OHV's on BLM and national forest lands near Butte, Montana, contains 800 miles of roads and trails over a 275,000 acre area. A study being conducted on this area shows a road and trail density that varies from less than .5 miles per square mile in undeveloped areas to over 4 miles per square mile in the more heavily accessed areas (USDA 1999c). This is representative of road and trail densities on affected public lands in southwestern and central Montana. In northwestern Montana where areas have been heavily accessed for timber harvest, road densities are often greater, but some are not available for motorized travel. Generally on BLM lands in the three-state area, recreationists are usually not more than a mile or two from a road or trail. However, this does not necessarily mean the public has legal access to these roads and trails because some originate from or cross adjacent private lands.

The actual number of roads and trails on BLM lands and national forests/grasslands is unknown, but records and

observations indicate there are thousands of miles of roads and trails on the affected lands. Almost all site-specific recreation attractions (e.g., dispersed camping spots and historic mining areas) have roads or trails leading to them.

Off-road motorized travel is not allowed in any BLM Wilderness Study Area (WSA). While motorized cross-country travel is not allowed within most national forest and grassland Forest Plan Recommended Wilderness and Montana Wilderness Study Areas, there are portions of these areas where motorized cross-country travel is presently allowed. These are covered in more detail in the Inventoried Roadless, Forest Plan Recommended Wilderness, and Wilderness Study section of this chapter.

Recreation settings contain a managerial component, such as regulations and restrictions that influence how and when federal lands are accessed, used, and what type of activities take place. Regulations and restrictions vary across federal lands. Regulations require that all FS and BLM areas and trails must be either classed as closed, restricted/limited, or open to off-road motorized vehicle use.

Over much of Montana, enforcement of travel regulations on BLM and FS lands is done in a cooperative fashion between the BLM, FS, and Montana Fish, Wildlife and Parks Wardens. The State of Montana has incorporated federal travel restrictions into state law, which allows the Wardens to enforce travel restrictions on NFS lands. There is no similar agreement in North Dakota and South Dakota.

Settings are influenced by restrictions that are placed on the land. OHV restrictions fall under several categories. On national forests/grasslands and BLM lands there are open areas that include areas open yearlong to motorized use with no restrictions and BLM Intensive Use Areas. There are five BLM Intensive Use Areas in Montana (3,710 acres): South Hills area near Billings, Glendive OHV area near Glendive, Terry OHV area near Terry, Glasgow OHV area near Glasgow, and Fresno OHV area near Havre. The BLM Intensive Use Areas have already gone through an analysis that determined motorized cross-country travel is an appropriate use. They have been designated for intensive motorized recreation use and are not part of the alternatives in this draft EIS/plan amendment. The other areas that are open yearlong are included in the alternatives for this draft EIS/plan amendment (11.2 million acres). Areas that are limited (BLM) or restricted (FS) include areas that have seasonal closures to motorized cross-country travel (4.7 million acres) and areas that are closed yearlong but have open roads and trails within them (5.6 million acres). The latter is often referred to as an area closure with designated routes and is not part of the affected environment. The areas with seasonal restrictions are included in the alternatives for this draft EIS/plan amendment (4.7 million acres). Finally there are closed areas that are entirely closed to motorized cross-country travel yearlong (5 million acres). These areas are also not part of any alternatives in this draft EIS/plan amendment (Table 3.1).

OHV Activities

Recreation activities include pursuits such as hunting, fishing, trapping, camping, picnicking, rock hounding, gathering products such as firewood and plants, viewing scenery and wildlife, hiking, cross-country skiing, nature study, and riding ATV's, motorcycles, and full size road vehicles for pleasure. Participation in recreation activities varies by season, topography, vegetative cover, and number of people taking part.

OHV's are used for a number of recreation activities. Photo courtesy of Montana Trail Vehicle Riders Association.

Several Montana studies have been conducted that give indications of motorized recreation activity participation. In 1993 and 1994, the Institute for Tourism and Recreation Research conducted a study of Montana that examined the rates of participation in eleven recreation activities (McCool and Harris 1994). In the 6 months preceding their survey, the study estimated that adult Montanans in the study participated in the following off-highway motorized recreation activities at the following rates: 9.1% motorcycle,

Table 3.1 OHV Designations Table - Acres by Forest Service and BLM Office

BLM Field Office	*Open Yearlong*	*Designated Intensive Use*	*Limited Seasonally*	*Limited Yearlong*	*Closed Yearlong*	*Total*
Miles City	1,069,114	2,320	631	1,626,989	80	2,699,134
Billings	236,796	1,270	80,000	101,480	6,940	426,486
Malta	1,665,610	40	328,720	110,206	0	2,104,576
Lewistown	778,516	80	375,874	214,294	23,620	1,392,384
Missoula	0	0	0	162,400	572	162,972
Butte	187,700	0	0	115,600	8,000	311,300
Dillon	712,460	0	79,560	117,314	58,774	968,108
South Dakota	273,972	0	0	0	6,700	280,672
North Dakota	35,603	0	22,164	0	1,990	59,757
Total	4,959,771	3,710	886,949	2,448,283	106,676	8,405,389
National Forest/ Grassland	*Open Yearlong*	*Designated Intensive Use*	*Restricted Seasonally*	*Restricted Yearlong*	*Closed Yearlong*	*Total*
Beaverhead-Deerlodge	1,318,883	0	602,269	792,113	639,007	3,352,272
Bitterroot*	693,566	0	102,298	38,380	282,838	1,117,082
Custer	490,489	0	267,593	45,324	383,737	1,187,143
Dakota Prairie	1,259,947	0	0	0	0	1,259,947
Flathead	1,050,659	0	53,026	147,593	1,101,771	2,353,049
Gallatin	773,856	0	5,773	9,927	1,011,070	1,800,626
Helena	497,893	0	78,341	198,301	200,878	975,413
Kootenai*	146,534	0	1,404,053	127,066	542,526	2,220,179
Lewis & Clark	12,621	0	1,334,107	129,213	386,348	1,862,289
Lolo	0	0	0	1,711,331	371,000	2,082,331
Total	6,244,448	0	3,847,460	3,199,248	4,919,175	18,210,331
	Open Yearlong	*Designated Intensive Use*	*Limited/Restricted Seasonally*	*Limited/Restricted Yearlong*	*Closed Yearlong*	*Total*
Total BLM & National Forests/ Grasslands	11,204,219	3,710	4,734,409	5,647,531	5,025,851	26,615,720

* Only includes lands in Montana.

11.8% ATV, and 19.6% 4X4 road vehicle. In 1997, Montana Fish, Wildlife and Parks conducted a random telephone survey of Montanans that included participation in recreation activities (Montana Fish, Wildlife and Parks 1997). The survey respondents reported using trails within the past two years preceding the survey for off-road recreation activities at the following rates: 2% motorcycle, 2% ATV, and 2% 4X4 road vehicle. While these studies do show different results, they are an indication that motorized recreation use by Montanans may be as low as 6% or as high as 20% of total recreation activity participation.

The words off-road and off-highway are often used synonymously and usually mean any riding that is not on pavement or on a high-standard gravel road. Riding the primitive roads and trails on public lands is often referred to as "off-road." It is unknown exactly how many people drive cross-country. We are not talking here of those people who just pull off adjacent to an existing road or trail to park or let someone pass, but who actually travel cross-country. Estimates vary up to 10%, depending on location, that people engaged in motorized activities travel cross-country, but recreation specialists and law enforcement personnel (B. Duncan et al., pers. comm. 1999) estimate when you look at the three-state area from the open grasslands in the east to the heavily forested areas of the west that cross-country travel averages 1% or less of the people engaged in motorized activities. This is a small percentage of the total recreation OHV use, but motorized cross-country travel does cause problems as identified in this EIS/plan amendment.

The type of activities and the amount of recreation use varies greatly from east to west. People travel cross-country for many reasons. Most cross-country use in eastern Montana, North Dakota and South Dakota occurs during the fall hunting season. Some recreationists drive cross-country in conjunction with other activities such as hunting, while for others motorized cross-country travel is the experience they are seeking. Some people just like to explore using their motorized vehicle. Some prefer more leisurely, less challenging activities, while others prefer the challenge of a steep hillside. Public lands provide many opportunities for OHV use that vary from backcountry to concentrated use areas such as the BLM South Hills OHV play area near Billings. While there are intensive use areas on BLM lands where there are no restrictions on where you can drive, there are no designated OHV areas offering motorized recreationists the opportunity to ride designated roads and/or trails that form a loop system with a variety of opportunity and length (much like the winter snowmobile trail systems).

In the eastern portion of the analysis area, impacts from intensive motorized cross-country use are minimal, which suggests a low frequency of motorized cross-country travel occurring in the eastern portion of the analysis area. However, there are a few areas where one can see the evidence of impacts from motorized cross-country travel. One example is Strawberry Hill near Miles City, a locally popular area used by both motorized and nonmotorized users.

People with disabilities travel cross-country at times to pursue their recreation activity. Currently, disabled access programs on public lands are focused on the hunting season, but there is increased interest to provide special access for other recreation activities and at other seasons of the year. The hunting season programs usually only allow the disabled person to hunt with a motorized vehicle from roads and trails that are closed to others. In Montana, most disabled access hunter programs are only offered to those who are issued a permit by the State to shoot from a motor vehicle.

In western Montana, OHV cross-country use is spread over the spring-summer-fall seasons and, in some cases, occurs yearlong at lower elevations where snow is sparse. Many areas are closed to cross-country use during the fall hunting season to provide for game security and/or provide a nonmotorized hunting experience. Areas open to motorized cross-country travel and where terrain and vegetation permit, generally receive additional motorized use during the fall hunting season. There are also a greater number of people out on public lands than in eastern Montana, North Dakota and South Dakota because of close proximity to larger population centers.

Recreation Opportunity and Use

The FS and BLM use slightly different methods for calculating recreation use. Each FS Recreation Visitor Day (RVD) is equal to 12 hours. This could be 1 person for 12 hours or 12 people for 1 hour, or any combination thereof participating in that recreation activity. BLM uses the term "visits" to measure use. A BLM visit is not measured in days, but is a person who visits BLM lands engaged in any recreation activity whether for a few minutes, full day or more. While these methods of tracking recreation use are different, they do give a relative relationship of use between the Rocky Mountain, Great Plains, and North American Prairie Regions.

Rocky Mountain Region: This consists of the Beartooth District of the Custer National Forest, the Gallatin, Beaverhead-Deerlodge, Helena, Lewis and Clark, Lolo, Flathead, and Kootenai National Forests and the lands managed by the BLM Field Offices at Butte, Dillon, Missoula and Lewistown.

National forest and BLM lands in this region contain many thousands of miles of fishing streams, hundreds of lakes, thousands of miles of constructed roads and trails, hundreds of developed recreation sites, and millions of acres of developed and undeveloped lands. National forest and BLM lands cover 17.8 million areas. Vegetation varies from dry foothill grasslands to dense moist forests. Topography varies from gentle and rolling to steep. Motorized cross-country travel occurs mostly on the flatter, more open country.

This region situated between Yellowstone and Glacier National Parks, bisected by Interstates 90 and 15, and containing the population centers of Butte, Helena, Bozeman, Missoula, Livingston, Dillon, Hamilton, Kalispell, and Libby, attracts local recreationists and is a destination for many out-of-state visitors. Many local cities have large OHV clubs. Just about every type of outdoor recreation takes place on these public lands. Because of the close proximity to larger population centers and good public road access, this region receives the most visitor use in the three-state area. The majority of motorized use occurs in this region. National forest lands cover 16.3 million acres in this area. Total visitor use for all activities on national forest lands was approximately 13 million RVD's for 1996. BLM lands cover 1.5 million acres in this area. Total recreation visitor use on these BLM lands was approximately 2 million visits in 1995.

Great Plains Region: This region contains the Grand River, Cedar River, and Little Missouri National Grasslands (all now part of the Dakota Prairie Grasslands), the portion of the Custer National Forest located in central and eastern Montana and in western South Dakota, and lands managed by the BLM Field Offices in North Dakota, South Dakota, Miles City, Malta, Lewistown, and Billings.

National forests/grasslands and BLM lands in this region contain fishing streams, rivers, lakes and ponds, and many constructed roads, and some constructed trails. In addition to designated roads and trail, nondesignated roads and trails are formed by visitors traveling cross-country. These roads and trails may be many years old and are not maintained. These routes often provide more challenging experiences, especially for horseback riders, hikers, and mountain bike enthusiasts. In addition to in-state hunters, much of the public land in this region are popular with antelope, deer, and upland bird hunters from out of state.

The Grand River and Cedar River National Grasslands comprise about 162,000 acres in northwestern South Dakota and southwestern North Dakota. There are no constructed trails and no developed campgrounds on the Grand River and Cedar River National Grasslands. Hunting is the most popular recreation activity, although camping and picnicking do occur. Prairie dog viewing and shooting are also popular activities. Some warm-water fishing is available on small reservoirs, and limited river floating is available during high-water seasons. Total visitor use for all activities averaged 14,700 RVD's annually between 1992 and 1996.

At slightly over a million acres, the Little Missouri National Grassland is the largest national grassland. The Little Missouri River, one of the longest freeflowing rivers in the U.S., is a state designated scenic river and provides canoeing opportunities when water flows are up. Large, remote, unroaded tracts can still be found in the grasslands. The 120-mile Maah-Daah-Hey Trail on the Little Missouri National Grassland connects the North and South Units of Theodore Roosevelt National Park. There are three developed campgrounds and three developed picnic grounds. Hunting (big game, small game, and waterfowl) is the most popular activity, followed by motorized travel/viewing scenery. The Little Missouri National Grassland offers most of the elk and all of the bighorn sheep hunting in the State of North Dakota. Camping, hiking, and horseback riding are also popular activities.

Interstate 94 bisects the Little Missouri River Grassland and U.S. Highway 12 cuts through the southwest corner. Tourists are attracted to the three units of the Theodore Roosevelt National Park within the grassland boundary and to nearby Medora, North Dakota, a rebuilt cowboy town. The rugged badlands topography in the grasslands attracts visitors. Lake Sakakawea, a major recreation resource, lies nearby to the north and east, and attracts people to the area. Total visitor use for all activities averaged 96,000 RVD's annually between 1992 and 1996.

The portion of the Custer National Forest in the Great Plains is located in northwestern South Dakota and in several blocks in southeastern and south central Montana. There are many roads, a few trails, six developed campgrounds, and a few fishing streams and ponds. In the west, the Ashland area with its twisted ravines, rounded hills covered with ponderosa pine, and large grassy areas is popular with thousands of hunters that annually search for white-tailed deer, mule deer, and wild turkeys. The easternmost portion of the Custer is grassy hills punctuated by massive limestone buttes and is home to the second largest density of raptors in the United States. This area is popular with birders and hunters.

BLM lands in the Great Plains cover 6.9 million acres in this area. Total recreation visitor use on these BLM lands was 521,000 visits in 1995. Hunting is the most popular recreation activity. Other popular recreation activities include camping, horseback riding, and motorized travel/viewing scenery. Most public lands in this region are

undeveloped, however there are a few campgrounds, picnic areas, and small fishing reservoirs.

North American Prairie Region: The Sheyenne National Grassland (now part of the Dakota Prairie Grasslands) comprises about 70,000 acres in southeastern North Dakota and represents a remnant area of tallgrass prairie. This grassland contains one fishing stream, five fishing ponds, and has a number of constructed roads and many two-track "prairie trails." A 25-mile portion of the North Country National Scenic Trail was constructed on this grassland. There are no developed recreation sites.

Big Game and upland bird hunting and motorized travel/ viewing scenery are the most popular recreation activities on this unit. Canoeing is popular on the Sheyenne River, which flows through parts of the grassland. Photography, horseback riding, and fishing are also summer recreation activities. The Fargo-Moorhead metropolitan area lies 50 miles from this grassland, and a fair number of people from that area recreate on the grasslands. Total visitor use for all activities averaged 21,000 RVD's annually between 1992 and 1996.

Big game hunting.

ENVIRONMENTAL CONSEQUENCES

Assumptions

Most OHV use occurs on roads and trails. Only a small percentage of the total recreation OHV use occurs cross-country, but motorized cross-country travel does cause problems. For many recreationists, the effect of motorized cross-country travel is user conflicts. Minimizing motorized cross-country travel would reduce the number and intensity of conflicts between motorized and nonmotorized recreationists.

Presently, roads and trails, some of which are user created, access the general areas where most recreation activities take place on public lands. Roads and trails already lead to most site-specific recreation spots such as dispersed camping and picnicking sites, lake, stream, and pond access, shooting areas, historic mining areas, and viewing areas.

The sale of OHV's will increase as the population increases, based on the economic model discussed later in this chapter.

Effects Common to All Alternatives

The BLM and FS have defined recreation activities into sixty different categories such as big game hunting, ice fishing, tent camping, riding ATV's, etc. Under this definition, no recreation activities would be eliminated by any of the alternatives. OHV use would still occur on roads and trails under all alternatives. Some of the recreation opportunities within an activity may change. No recreation users would be "locked out" from BLM lands and national forests/grasslands since access on roads and trails remains the same. Effects on various aspects of opportunities within recreation activities are covered under the alternatives.

No Action Alternative

Under the No Action Alternative, user conflicts would continue to increase as more motorized recreation occurs on public lands that are open and unrestricted to motorized cross-country travel. Motorized recreation use is increasing and as this use increases, more people would travel cross-country in places where they are allowed. On BLM and NFS lands, conflicts from motorized cross-country travel would only be reduced when site-specific travel planning is completed and implemented or when emergency closures are put into effect. The size of these site-specific travel planning areas would vary and may be a watershed, mountain range, ranger district or field office, or a project area such as a timber sale.

Nonmotorized recreationists (not hunters) would continue to have their recreation experiences reduced by the noise, exhaust fumes, and wheel tracks left behind from motorized cross-country travel. Noise spoils the solitude that many recreationists are seeking, especially in remote areas. This happens primarily during the nonwinter season when most of the cross-country use occurs. In the Rocky Mountain Region (western and portions of central Montana) there are many areas where motorized cross-country travel is not allowed. Some of these areas are entirely closed to motorized vehicles while others have designated routes open to a variety of motorized vehicles within them. People seeking solitude or a quiet recreation experience can usually find the recreation experience they are looking for in one of these areas, however, these areas may not be close to where they

are or have desirable settings or attractions that make people willing to travel to them. Areas that are nonmotorized or contain nonmotorized trails are generally not available on the Great Plains and North American Prairie national forests/grasslands and BLM lands, where most of the area is presently open to motorized cross-country travel year-long or seasonally.

Motorized recreationists who prefer to stay on roads and trails would continue to be impacted by those recreationists traveling cross-country on motorized vehicles and not practicing Tread Lightly! principles of staying on existing routes and minimum impact.

Disturbance of the natural appearing landscape by user-created roads and trails would continue to have an effect on visitors who find the disturbance unsightly, objectionable, and reduces the visual enjoyment of their public lands. Depending on location and management area objectives, many additional user-created routes by people traveling cross-country would not meet land management objectives for scenic values in the foreground and middleground viewing areas.

People affected during hunting seasons are those hunters whose methods of access, scouting, stalking, and retrieval are by foot or horse and, to some extent, those motorized hunters who stay on roads and trails. Their hunting experience is reduced or spoiled by other hunters using motorized vehicles to travel cross-country to scout for game, access favorite hunting areas, drive or chase game for a better shot, and to retrieve game. Contributing to this diminished hunting experience is the noise created by motorized vehicles, which disturbs and displaces game animals from the immediate area. The effects are more pronounced where cross-country motorized use is more common, such as the flatter and more open country of the Great Plains, the prairie of eastern North Dakota, and along portions of the continental divide. Fewer hunters are affected in the heavily timbered and/or steeper areas of western Montana where there is less opportunity for motorized cross-country travel.

In the Rocky Mountain Region and in the Missouri River breaks area, there are many areas where motorized cross-country travel is not allowed during the hunting season. Some of these areas are entirely closed to motorized vehicles while others have designated routes open to a variety of motorized vehicles. Hunters seeking a walk-in or quiet hunting experience can usually find the recreation experience they are looking for in one of these areas, however, these areas may not be in the geographic area where they prefer to hunt. These same types of quiet or nonmotorized hunting opportunities are generally not available in the Great Plains and prairie public lands, where most of the area is open to motorized cross-country travel.

There would be no effect on people with disabilities and those people not physically fit to walk distances, because the same opportunities for motorized travel would continue to be available.

Alternative 1

The effects of this alternative would not eliminate recreation activities, such as driving for pleasure, rock hounding, or driving motorcycles or ATV's, but would influence some aspects of various recreation activities. For OHV users, this alternative would eliminate recreational experiences associated with cross-country driving. It would also limit driving to a camp spot within 50 feet of an existing road or trail by the most direct route. In many situations this would make it difficult for campers to get far enough off the road to avoid the noise and dust from passing traffic. Some people may view these changes as a loss of recreation opportunity.

Most public lands would still be accessible under this alternative, as the existing road and trail network is generally dense enough that people do not have to walk more than a mile or two to reach a road or trail. Some people may view these changes as a loss of recreation opportunity. Putting motorized cross-country travelers on roads and trails would have little or no effect on motorized visitors who only use roads and trails now.

User conflicts caused by motorized cross-country travel would be reduced substantially by this alternative. Recreational experiences of nonmotorized recreationists would improve under this alternative. With a reduction in noise, the solitude that many recreationists are seeking should increase in remote areas away from motorized roads and trails. Motorized users who practice Tread Lightly! principles (i.e., stay on existing travel routes and minimum impact) would not have their recreation experiences reduced by impacts from motorized cross-country travelers.

Disturbance of the natural appearing landscape from past roads and trails created by motorized cross-country travel would continue to have an effect on visitors who find the disturbance unsightly, objectionable, and reducing their visual enjoyment. Additional disturbance caused by motorized cross-country travel would be eliminated.

Under this alternative, the effect on hunters would vary depending on the experiences they seek. Motorized hunters would have a change from their present unrestricted hunting experience to one that restricts them to roads and trails. Hunters whose methods of access, scouting, stalking, and retrieval are by foot or horse would have their recreation experience improved by the elimination of noise which disturbs and, potentially, displaces game animals from the

immediate area. The effects are more pronounced in the flatter and more open country where cross-country motorized use is more common.

Impacts to people with disabilities would be similar to the motorized users and hunters. This alternative would not have much effect on their access to public lands, as the existing road and trail network already leads to most site-specific recreation spots such as campsites. They would have to stay on roads and trails. The greatest impact would be the loss of the opportunity to drive cross-country to retrieve big game and hunt upland birds.

Closing areas to motorized cross-country travel should allow nature to reclaim damaged areas. This healing over time should improve the visual impression and contribute to a more satisfying recreation experience.

Alternative 2

Alternative 2 would have similar effects as Alternative 1 with the following exceptions. Driving to a camp spot would be limited to 300 feet (rather than 50 feet) by the most direct route from an existing road or trail, allowing people to get further away from the traffic and dust and affording more privacy. Motorized cross-country travel would be allowed for big game retrieval in the Great Plains area of Montana covering the Custer National Forest with the exception of the Beartooth Ranger District and the BLM Billings, Malta, Miles City, and Lewistown Field Offices with the exception of the Great Falls Field Station. Allowing motorized cross-country travel for big game retrieval would likely result in some conflicts between motorized and nonmotorized hunters. However, the frequency of these conflicts would be low under the assumption that most game retrieval is on roads and trails and that people cannot hunt cross-country, but only have a one-time game retrieval opportunity.

Exceptions would be allowed for people with disabilities to travel cross-country with a motorized vehicle by permit. The permit would specify the terms and conditions under which motorized cross-country travel would be allowed.

Alternative 3

The effects covered under Alternative 2 apply to the Lewis and Clark, Helena, Beaverhead-Deerlodge, Gallatin, and Custer National Forests, Dakota Prairie National Grasslands, and the Dillon, Butte, Great Falls, Billings, Malta, Miles City, Lewistown, North Dakota and South Dakota BLM Field Offices. The exception to Alternative 2 is that hunters would only be allowed to drive cross-country for game retrieval between the hours of 10 a.m. and 2 p.m. Hunters who shoot their game late in the day and want to retrieve it by motorized vehicle would have to wait until the following day. Since the majority of big game hunting occurs in the morning and evening hours, this alternative would reduce user conflicts. Individuals who wish to drive to retrieve game would not be allowed to do so when others are hunting during prime hours.

The effects covered by the No Action Alternative apply to the other areas since there is no change from the current direction. There is less opportunity for motorized cross-country travel in the Kootenai, Flathead and Bitterroot National Forests because of timber cover, heavy forest undergrowth and brushfields, and/or steep slopes.

Alternative 4

The effects identified under the No Action Alternative apply from 6/15 to 8/31 and 12/2 to 2/15 when motorized cross-country travel is allowed. In the Rocky Mountain Region these effects would occur primarily during the 6/15 to 8/31 open season when most of the people are using the areas. Less people are affected in the Great Plains and Prairie regions during this open time, as the majority of use in these regions occurs during the fall hunting season when cross-country travel would be prohibited.

The effects on recreationists during the closed period 9/1 to 12/1 and 2/16 to 6/14 are similar to the effects in Alternative 2 with some exceptions. Motorized cross-country game retrieval is allowed in all national forest/grassland and BLM land areas. For public lands in the Great Plains and Prairie regions, this alternative precludes motorized cross-country travel during the fall hunting season when most motorized cross-country travel in this area occurs. During the periods when visitors are allowed to drive cross-country there would be some use, although the amount of cross-country would be minimal.

Cumulative Effects

The effects on the settings and recreation activities are for the interim period until site-specific travel planning takes place. Cumulatively, under Alternative 1, motorized cross-country travel would be restricted on most public lands in the analysis area. These lands would be added to lands already closed to motorized cross-country travel in the three states. Public lands already closed to motorized cross-country travel include all Montana, North Dakota and South Dakota state lands, federal wildlife refuges, and areas managed by the National Park Service. Some motorized cross-country travel is permitted on designated areas of Bureau of Reclamation lands.

For Alternative 2, the cumulative effects are the same as Alternative 1 with the exception of game retrieval in the

eastern portion of the analysis area and disabled access by permit.

The cumulative effect of Alternative 3 is that most public lands in the three-state analysis area east of the continental divide would be off limits to motorized cross-country travel. These lands would be added to lands already closed to motorized cross-country travel in the three states. Public lands already closed to motorized cross-country travel include all Montana, North Dakota and South Dakota state lands, federal wildlife refuges, and areas managed by the National Park Service. Some motorized cross-country travel is permitted on designated areas of Bureau of Reclamation lands.

The cumulative effect of Alternative 4 is that recreationists would have more seasonal motorized cross-country restrictions placed on their activities. Continued alterations to recreation settings may occur from additional user-created roads and trails.

Comparison of Alternatives

Recreationists can be separated into motorized and nonmotorized. The No Action Alternative is the most desirable for motorized recreationists, followed by Alternative 4 and then Alternative 3. Alternatives 1 and 2 would be least desirable for motorized recreationists. For nonmotorized recreationists, the benefits of the alternatives are reversed where Alternatives 1 and 2 are most beneficial, followed by Alternative 3, then Alternative 4. The No Action Alternative would be least desirable for nonmotorized recreationists.

The No Action Alternative has the most detrimental effects to recreation experiences by contributing to conflicts between users and does not promote Tread Lightly! principles. Because Alternative 4 leaves the summer season open to motorized cross-country travel, it has the next most detrimental effects to recreation experiences. Motorized users under Alternatives 1 and 2 may feel they are losing some opportunities for their recreation activity.

The No Action Alternative has the greatest effect on recreation settings. The continuation of user-created roads and trails would make more roads and trails that would need to be reclaimed when site-specific travel planning is completed. Since there would be more roads and trails, it would take longer to reclaim all the roads and trails not needed for a permanent public land transportation system. Creation of more user-created roads and trails is possible in Alternative 4. Most likely, there would be fewer roads and trails to reclaim than under the No Action Alternative. Alternatives 1 and 2 should allow nature to begin to reclaim damaged areas.

INVENTORIED ROADLESS, RECOMMENDED WILDERNESS AND WILDERNESS STUDY AREAS

AFFECTED ENVIRONMENT

This section discusses those areas within the analysis area referred to as Inventoried Roadless, Recommended Wilderness, and Wilderness Study Areas.

In the 1980's and early 1990's, the BLM went through a process of inventory, analysis, and recommendation for lands that could be included in the National Wilderness Preservation System. An EIS was completed and the report submitted to Congress. No motorized cross-country travel is allowed in any BLM Wilderness Study Area and they are not part of the affected environment for this project.

Since 1970, the FS has inventoried and studied roadless areas greater than 5,000 acres and roadless lands, regardless of size, adjacent to existing wilderness. This inventory was updated and re-evaluated during preparation of the current land and resource management plans known as forest plans. These roadless areas are referred to and tracked today as Inventoried Roadless Areas. Some of these areas were recommended for wilderness in forest plans and are referred to as Forest Plan Recommended Wilderness Areas.

In 1977, Congress passed the Montana Wilderness Study Act (P. L. 95-150). In it, Congress identified specific areas it wanted studied. The areas are tracked as Montana Wilderness Study Act Areas.

As a minimum, all forest plans state that Forest Plan Recommended Wilderness and Montana Wilderness Study Areas will be managed to maintain their existing wilderness character and potential for inclusion in the National Wilderness Preservation System. Not all Inventoried Roadless Areas are intended to remain undeveloped. The desired future condition identified in Forest Plans for Inventoried Roadless Areas ranges from full development to Recommended Wilderness. FS policy requires that whenever a ground disturbing project is proposed within an inventoried roadless area, the effects of that project on the roadless area must be analyzed and disclosed.

Current Forest Plan direction calls for many areas within Forest Service Inventoried Roadless Areas, Recommended Wilderness Areas, and Montana Wilderness Study Areas to be closed to motorized cross-country travel yearlong. These lands are not part of the affected environment for this project. There are other lands within Forest Service Inventoried Roadless Areas, Recommended Wilderness Areas,

and Montana Wilderness Study Areas where current Forest Plan direction does not prohibit motorized cross-country travel yearlong. This amounts to approximately 3.4 million acres of Inventoried Roadless, 169,000 acres of Forest Plan Recommended Wilderness, and 430,000 acres of Montana Wilderness Study areas. These lands are included as part of the affected environment in this EIS. The acres in each category should stand alone and are not cumulative. Forest Plan Recommended Wilderness and Montana Wilderness Study Areas are mostly found within Inventoried Roadless Areas, but may also contain some other adjacent lands. Effects of motorized cross-country travel identified in other sections of this report also apply to Inventoried Roadless Areas, Forest Plan Recommended Wilderness, and Montana Wilderness Study areas.

ENVIRONMENTAL CONSEQUENCES

Effects Common to All Alternatives

Users with the expectation that Wilderness Study Areas would provide a given level of solitude may be offended by the presence of motorized recreationists. Agency officials generally view these social effects such as solitude as transitory, as these forms of recreation would not be allowed if the study area were designated as wilderness (General Accounting Office 1993).

No Action Alternative

Under the No Action Alternative, current Forest Plan direction allows motorized cross-country travel to continue within Inventoried Roadless, Forest Plan Recommended Wilderness, and Montana Wilderness Study areas where the Forest Plan does not now prohibit it. Motorized cross-country use may have an effect on the naturalness (physical characteristics) of Wilderness Study Areas (General Accounting Office 1993). The same effect on naturalness also applies to Forest Plan Recommended Wilderness Areas and Inventoried Roadless Areas. These effects can take the form of off-trail vegetation and soil damage, erosion, damage to riparian areas, pollution, and disturbance to wildlife (General Accounting Office 1993). These effects are all covered in other sections of this draft EIS/plan amendment. Any effects under the No Action Alternative would probably remain until the area is reclaimed by agency action, because continued and increasing motorized cross-country travel would not allow the area to be reclaimed by nature.

Alternatives 1 and 2

Under these alternatives, closing of the undeveloped areas to motorized cross-country travel would further enhance the protection of the physical naturalness of these areas. It should begin to allow nature to reclaim any damaged areas.

Alternative 3

Under this alternative the effects listed under the No Action Alternative would apply to the undeveloped areas that would remain open to motorized cross-country travel on Kootenai, Flathead, and Bitterroot National Forest lands. On the other national forests, the undeveloped NFS lands that would be closed to motorized cross-country travel would have the same effects as covered in Alternatives 1 and 2 above.

Alternative 4

The effects of this alternative would be very similar to those associated with the No Action Alternative.

Cumulative Effects

Alternatives 1 and 2 would take the remaining areas in Forest Plan Recommended Wilderness and Montana Wilderness Study areas where the Forest Plan does not currently prohibit motorized cross-country travel and close them to help lower the loss of naturalness so that the wilderness character would remain intact. When added to other areas already closed to motorized cross-country travel, all Wilderness Study Areas and Forest Plan Recommended Wilderness on national forests/grasslands and BLM lands within the three-state analysis area would be closed to motorized cross-country travel. It also helps protect the naturalness of Inventoried Roadless areas that are not part of Wilderness Study Areas or Forest Plan Recommended Wilderness areas. The No Action Alternative and Alternative 4 may pose a greater risk of not maintaining wilderness character on all forests. Alternative 3 would have a greater risk of not maintaining wilderness character on the Kootenai, Flathead, and Bitterroot National Forests.

Comparison of Alternatives

Alternatives 1 and 2 are the most desirable for protecting the physical naturalness of undeveloped areas, to help maintain the wilderness character of Montana Wilderness Study Areas and Forest Plan Recommended Wilderness, and to begin to allow nature to reclaim any damaged areas. This is followed by Alternative 3. The No Action Alternative and Alternative 4 are the least desirable for protecting naturalness and wilderness character.

SOCIAL

AFFECTED ENVIRONMENT

Introduction

This section focuses on the demographic and social trends occurring in Montana, North Dakota and South Dakota. The following individuals and groups will be discussed: recreationists, environmental advocacy groups, ranchers/ permittees, and rural communities.

Demographics and Social Trends

In 1998, the populations of Montana, North Dakota and South Dakota were each less than one million people, resulting in population densities of 6 people per square mile in Montana, 9 people per square mile in North Dakota, and 10 people per square mile in South Dakota. Montana's population grew by 10% from 1990 to 1998. In that same period, the population in North Dakota decreased by less than 1% and the population in South Dakota grew by 6%. In each of these states, rural areas tended to decline in population while larger urban areas tended to grow.

In Montana, the larger population centers, where population is increasing, are located in the western and south-central parts of the state. Areas with declining populations tend to be located in the eastern and north-central parts of the state. Montana's population is expected to continue to grow primarily due to in-migration and is projected to exceed 980,000 by 2010. Growth will continue to be higher in the population centers in western Montana than for the state as a whole.

In North Dakota, 46 of 53 counties lost population from 1990 to 1998. In general, major urban areas and reservations had higher population growth rates. The population of North Dakota is projected to increase to 677,000 by the year 2005, and to 704,000 by the year 2015.

In South Dakota, slightly over 40% of the counties have gained in population from 1990 to 1998. Counties that gained population were located in western South Dakota near the Black Hills, and in eastern South Dakota where some of the larger population centers are located. Counties that lost population tended to be those with smaller populations located in the east-central part of state. The population of South Dakota is projected to increase to 810,000 by the year 2005 and to 840,000 by the year 2015.

There are seven Indian Reservations located in Montana, three in North Dakota, seven in South Dakota, and two that straddle the North Dakota/South Dakota border. In 1990, over 30,000 American Indians lived on Montana Indian Reservations, over 15,000 in North Dakota and nearly 34,000 in South Dakota. American Indian populations on reservations tend to be younger and to grow faster than the non-Indian populations of the surrounding areas.

A trend that is common to all states is the aging of the population. The percentage of persons under 20 years of age will decrease and the percentage of people over 65 will increase over the next 30 years. As an example, in Montana, the percentage of population under 20 years old is projected to decrease from 30.2% in 1995 to 24.3% in 2025. Conversely, the percentage of population 65 and over is expected to increase from 13.1% in 1995 to 24.5% in 2025. This would translate into a Montana population over 65 that more than doubles in size between 1995 and 2025. The percentage of people over 65 is actually increasing more rapidly in states like Montana, North Dakota and South Dakota because young people are more likely to leave for advanced education, military service and employment opportunities not available locally.

The movement of people into some rural areas began in the 1970's and is expected to continue into the 21st century. This migration turn-around reflects a reversal of the rural-to-urban migration pattern found in most of the U.S. prior to the 1970's. Intermountain valleys in Montana, such as Paradise Valley south of Livingston and the Bitterroot Valley south of Missoula, typically experience in-migration. In scenic areas, particularly those suitable for recreation, ranches are being sold for recreation uses or subdivided for homes. Some in-migrants buy smaller lots to ranch or farm but do not depend on an economic return from the property. Some of these rural areas are moving from a long-term economic dependency on agriculture or mining to a service-based economy. The population in-migration has increased contacts between long-time rural residents and newcomers whose beliefs and values may challenge the existing way of life. Long-timers may feel they have lost control of their community, making it a less desirable place for them to live.

Other rural areas, particularly those on the Great Plains in eastern Montana, North Dakota and South Dakota, have continued to lose residents in the last decade. These communities typically have had economies based on agriculture, oil and gas, or other mineral development, and have suffered declines in population as agriculture became mechanized and mineral development came and left. Some of these communities have difficulty maintaining their local businesses as well as such services as schools and health care. Residents are concerned about the economic survival of their communities and preserving their traditional lifestyles.

Another important trend is the increasing popularity of Montana for recreation. The demand for the types of activities most available on federal lands is growing faster than for other activities (USDA 1989, Cordell 1999). The 1989 report states that some of the major issues facing recreation today include protecting resources and open space, acquiring more land to meet anticipated demand, resolving conflicts among different recreation users, and addressing the need for more access to outdoor recreation areas.

Many communities are having problems maintaining access to federal lands if access through closed private lands is required to reach federal lands. In addition, loss of access to private lands is putting more pressure on federal lands. Loss of access occurs for a variety of reasons: ranches are purchased for recreation and homesites and closed to others, ranchers lease their land to outfitters and close it to others, or ranchers close their land to avoid problems with safety, cut fences, spreading weeds, litter and open gates.

Changing Attitudes

The proposed changes in the management of motorized cross-country travel on public lands are just one aspect of a broader debate on environmental issues and resource management that is occurring both in American society and globally. Social values for lands and natural resources take many forms such as commodity, amenity, environmental quality, ecological, public use, spiritual, health, and security (Stankey and Clark 1991). In the past, natural resource management has tended to emphasize commodity values. The emerging emphasis on other values has forced a re-evaluation of the commodity emphasis. Stankey and Clark's (1991) report states, "A new focus on the part of the public involves a shift from commodities and services to environments and habitats. The public is much more concerned about forests as ecosystems than they have been previously and is more concerned with having access to decisions about them."

A nationwide survey conducted by Roper Starch Worldwide (1998) offers some interesting information on attitudes toward environmental regulation. Respondents were asked whether they thought environmental laws and regulations had gone too far, had not gone far enough, or had achieved the right balance. Almost three times as many respondents thought laws and regulations had not gone far enough (47%) as those who thought laws and regulations had gone too far (16%). Just over a quarter of the respondents (26%) thought the laws had struck the right balance. In contrast to the nation as a whole, 29% of the respondents living in rural areas and 27% of the respondents living in the West stated that environmental regulation had gone too far.

A growing counter-movement has been occurring in the West. In places where land use has been unrestricted, there is increasing concern regarding the control and management of public lands. People with these concerns feel that change in public land management is being driven by government officials and environmental advocacy groups who do not have a true understanding of the lands or the people living nearby who depend upon these lands for their livelihood and recreation. There is particular concern about the loss of traditional uses of the land such as livestock grazing and cross-country vehicle use. People with these concerns seek to balance what they consider to be "environmental extremism" with economic and human concerns. They may feel that local elected officials, who deal with their problems on a daily basis, are better equipped to make decisions about public lands.

Affected Groups

The groupings discussed in this section are made to facilitate the discussion of social impacts. It should be noted that these groupings greatly simplify the members' actual values and attitudes. For instance, some ranchers engage in recreation and are particularly concerned about the environment. Recreationists may engage in motorized and nonmotorized types of recreation, and may have high levels of concern about the environment.

Recreationists: Research on the effects of participation in outdoor recreation shows such benefits as improved physical and mental health, increased self-esteem, and an enhanced sense of well-being and spiritual growth. Participation in outdoor activities can also increase family interaction and foster cohesion. Benefits to communities include increased social solidarity, satisfaction with community life, and increased ethnic and cultural understanding (USDA 1989). A survey of the American public on the effects of participation in outdoor recreation indicates that people who participate in active outdoor recreation are more satisfied with the quality of their lives in a wide variety of areas than is the general public (Roper Starch 1994).

Cordell and others (1999) have developed national and regional projections for a variety of outdoor recreation activities. In the Rocky Mountain region, about three million people participated in off-road driving in 1995. That number is estimated to increase by 17% by the year 2020. About five million people participated in hiking in 1995; that number is estimated to increase 24% by the year 2020. Nearly two million people participated in backpacking in 1995; that number is estimated to increase 18% by 2020. Finally, in the Rocky Mountain Region, two million people participated in hunting in 1995. That figure is estimated to increase 12% by 2020.

A study of Montana residents' trail use was conducted in 1994 by the Institute for Tourism and Recreation Research. This study was designed to be representative of the entire Montana population and included participants who engaged in walking for pleasure/day hiking, driving vehicles off-road for recreation, backpacking, using an ATV and motorcycling off-road. Respondents were asked about their motivations for taking a trail trip. The most important motivations were nature (be in a natural setting, understand the natural world better), physical fitness (improve my physical health, help keep me in shape), stress release (get away from my everyday responsibilities, help reduce or release some built-up tensions) and affiliation (so I could do things with my companions, be with others who enjoy the same things I do).

Survey respondents were also asked what other activities were compatible with the activity they participated in. Not surprisingly, backpackers and day hikers found other nonmotorized activities to be most compatible with their activity. In all cases, motorized users were much more likely to say their activity was compatible with day hiking and backpacking. Forty-five percent of the respondents agreed that conflicts on trails are relatively minor while 15% disagreed. Less than 2% the respondents reported conflict with others during their most recent trail experience.

According to Boston and others (1997), "OHV recreation covers a huge range of activity from casual family use to intense competition; from use in the backyard to use on high mountains; wildland trail use to open desert. Enjoyment comes from use where the vehicle itself is the focus of the experience to the use of the vehicle as an enjoyable method of reaching or enjoying remote terrain; from a way to escape societal pressures to a way of sharing experiences with family or friends; from casual or organized activities."

Based on comments received during scoping, cross-country vehicle users participate in their activity in Montana, North Dakota and South Dakota as a way for families and friends to enjoy the beautiful backcountry scenery together. This activity has helped their children grow into responsible citizens and passing these activities on to future generations is important. Some rely on motorized cross-country travel to retrieve game during hunting season. Many OHV users indicated they have a great respect for the land and try to be courteous when traveling. They feel the few people who do not follow the rules are giving all motorized cross-country travelers a bad name. Some even indicate a need for some restrictions on cross-country use.

The following concerns were identified by motorized cross-country users during the scoping period: loss of access areas traditionally used for these activities, damage being unfairly blamed on cross-country vehicle use, and planning focusing on a large area rather than on particular problem areas. Some of these recreationists indicated they are not concerned with this preliminary step, but feel it is only the beginning and that trail and road closures would follow during the next phase. These commenters support exceptions for game retrieval, disabled access and hunting although some mentioned fairness for all as an issue. OHV users generally indicated they did not experience conflicts with other users.

OHV recreation is a famiy activity. Photo courtesy of Montana Trail Vehicle Riders Association.

Based on comments received during scoping, the prime motivation of nonmotorized users appears to be a quiet, peaceful experience in beautiful surroundings away from the rushing and crowding of everyday life. Nonmotorized user concerns revolve around conflicts with motorized users. These concerns included noise, the smell of gas, dust, safety issues, wildlife displacement and harassment, and resource damage. Some commenters indicated that motorized and nonmotorized uses are not compatible; when motorized use begins in an area, the nonmotorized users go elsewhere.

Sometimes motorized and non-motorized uses are not compatible.

Some hunters also feel that motorized cross-country use negatively affects their hunting experience. The results of a survey published by Montana Fish, Wildlife and Parks (1998a) show improper vehicle use/road hunting is one of the top behavior problems witnessed by respondents in the 1997 hunting season. Nearly half of the respondents mentioned this problem. Respondents were also concerned about the widespread use of ATV's and their negative impact on the sport of hunting.

Research (Williams 1993a) shows that the following factors influence the likelihood of conflict: activity style, resource specificity, mode of experience and tolerance for lifestyle diversity. Activity style refers to the significance the person attaches to the activity. Conflict is much more likely to occur if the activity is an integral part of the person's lifestyle rather than an occasional activity. Resource specificity refers to the significance a person attaches to using a specific resource. Conflict is more likely to occur when the person has a special relationship with a place and perceives others are disrupting the traditional uses of the place or devaluing its meaning. Mode of experience refers to the way in which the environment is perceived. Conflict is more likely to occur when the person perceives the environment as part of the experience rather than as a backdrop for the experience. The last factor is tolerance for lifestyle. Conflict is more likely to occur when the user has a higher tendency to reject lifestyles that are different than one's own. Examples include a preference for mechanized versus nonmechanized or consumptive versus nonconsumptive activities.

Noise is a major issue to many nonmotorized users. Most of the scoping comments that indicated conflict as a problem specifically mentioned noise as being one of the major contributors to the conflict. In addition to the idea that nonmotorized users engage in recreation for the serenity, solitude and quiet that it offers, many are also concerned about the effects of noise on wildlife. Some of these users also mentioned their concern about the loss of an alternative to the world in which we live, where the noise of engines is all pervasive, and the need to protect areas where natural quiet can be experienced.

Some commenters discussed the amount of space taken up by these vehicles, indicating they do not just occupy the space in which they are moving, but also a much larger space surrounding the vehicle; i.e., it only takes one motorized vehicle to fill a whole basin with the sound of the machinery. A noise study conducted by the USDA (1993) indicated that while a motorcycle at a distance of 400 feet or more would not cause sounds loud enough to impact a person's hearing, the sounds produced by five motorcycles ridden on typical motorcycle trails are detectable, at least occasionally, up to one-half mile away.

Research confirms the importance of noise to recreationists. According to Gramann (1999), "Many surveys show that quiet, solitude and natural sounds play important roles in recreation experiences…. Recreation area users consistently state that escaping noise and enjoying the sounds of nature are among the important reasons they visit natural areas."

The aging of the analysis area population is discussed at the beginning of this section. The available research indicates that participation in outdoor activities changes as people age. However, it is unclear how recreation choices will change as the "baby boomer" generation ages. As Hornback (1991) indicates, "Though aging is the prime social trend of the next two decades, we have little understanding of how the leisure sequence unfolds as people age. Do bikers turn into guests at dude ranches or go on 'ecocruises'?"

The demand for motorized disabled access has, to date, been associated with hunting. However, the 2000 Vision for Montana State Parks (Montana Fish, Wildlife and Parks 1998b) indicates the number of disabled Americans participating in outdoor recreation is increasing, along with the demand for more accessible recreation opportunities. The State of Montana issues permits to hunt from a vehicle for persons who are 100% disabled. In the last few years, 1,000 to 1,200 permits have been issued annually. BLM resource management plans address the general issue of motorized cross-country access for the disabled, but since the demand had not been there, it is unclear what rules would be used to determine what constitutes a qualifying disability. Several forests have access hunter programs but no programs for disabled access other than hunting.

Environmental Advocacy Groups: Based on the comments received during scoping, environmental advocacy

groups and individuals support a more restrictive policy for motorized cross-country use, and most feel vehicle use should be restricted to designated and signed roads and trails. New routes should be designated only after public review and completion of travel plans by both agencies. Some of the reasons given for these views include problems with erosion, vehicle pollution, spread of noxious weeds, disturbance to other recreationists, wildlife habitat destruction and fragmentation, and disturbance to native plant communities. Some commenters feel these problems are occurring because the population is increasing, which puts increasing pressure on the natural environment.

Some groups indicated the proposal as outlined violated the National Environmental Policy Act (NEPA) and other regulations and that under this proposal travel planning would take too long to complete and implement. Concern regarding collaborative processes and cost share agreements with private groups that give any group a special "right" or promotes commercialization was also received during scoping. Specifically mentioned were projects funded by the motorized recreation industry that would have a vested interest in promoting motorized cross-country use.

A major concern is the perceived legitimization and continued use of user-created roads and trails that have been developed through unauthorized means. There is concern that more roads and trails would be developed before the travel plans that could prohibit their use are in place. Many indicated that these user-created roads and trails should be closed and revegetated.

Few of these commenters offered opinions on whether exceptions for motorized cross-country travel for game retrieval, disabled access and/or camping should be allowed. Those that did comment indicated enforcement problems would make these exceptions unworkable.

The condition of resources on public lands is important to this group because they value these resources for recreation, wildlife, scenic and spiritual qualities, and a variety of other reasons. Many appreciate just knowing that these areas exist and feel federal agencies have an obligation to manage these resources for future generations.

Ranchers/Permittees: Permittees feel they face increasingly stressful social and economic situations as they try to balance their traditional lifestyles with demands from government agencies and other federal land users such as recreationists. Some permittees refuse to let hunters or recreationists cross their private land to gain access to adjacent public lands. The problems prompting these refusals include people driving cross-country and damaging grass, spreading weeds, cutting fences, leaving litter and leaving gates open.

Ranchers are increasingly relying on 4-wheel drive vehicles and ATV's to deliver feed, salt and supplements to cattle, mend fence, and herd cattle. ATV use has increased dramatically in the past ten years in Montana, North Dakota and South Dakota with the introduction of the 4-wheeled ATV. For all BLM permittees, permission to travel off-road for activities associated with the administration of their permit is implied rather than explicitly stated in the lease. For FS permittees, the situation varies by ranger district.

Rural Communities: Rural communities are facing many challenges. Residents of rural areas believe they are engaged in a struggle to maintain control of their community's character rather than to control the frontier, as in the past. Many groups, including both newcomers and longtime residents, want to maintain the traditional rural character.

Some rural areas, such as those in eastern Montana, North Dakota and South Dakota, have continued to lose residents in the last decade. These communities may be having difficulty maintaining their local businesses and services such as schools and health care. Residents are concerned about preserving their current lifestyles and the economic survival of their communities. This leads to concern about any government activity that could affect the local economy. They may feel that change in public land management is being driven from the outside by government officials and environmental advocacy groups that have little understanding of local customs and culture. These communities often have a limited ability to react to change because of their small population base (Harris and others 1996).

Other rural areas, such as those in western Montana, are struggling to maintain their rural character in light of high levels of in-migration and economic change from an agricultural to a recreational base. Residents of these communities worry they are "losing their quality of life because of more people, more traffic, and more unplanned haphazard development" (Williams 1993b). At the same time, many communities resist zoning and planning.

ENVIRONMENTAL CONSEQUENCES

Effects Common to All Alternatives

Under all alternatives, the social impacts are described in terms of effects to social well-being. The type of things that could affect social well-being included the amount and quality of available resources such as recreation opportuni-

ties and resolution of problems related to resource activities. Other less tangible beliefs that could affect social well-being include individuals having a sense of control over the decisions that affect their future, and feeling that the government strives to act in ways that considers all stakeholders' needs.

No alternative would affect the demographic or major attitudinal trends within the analysis area.

No Action Alternative

Effects to all groups would continue as they have in the past because management of motorized cross-country activities would not change. This alternative is most responsive to the desires of individuals and groups who feel public lands should remain open to motorized access at the current levels. This alternative best addresses their concerns and would enhance their social well-being. This alternative is most responsive to rural communities whose residents would prefer that current activities on public lands are not limited.

This alternative would facilitate the transition of the aging population from activities such as hiking or mountain biking to less strenuous activities such as motorized cross-country vehicle use. However, there is no clear evidence that people would choose to make this type of transition as they age.

Because the noise issue is not addressed in this alternative, conflicts between motorized cross-country users and other types of recreationists would continue and, perhaps, increase in the future as the number of people recreating on public lands increases. The quality of the hunt for some hunters would continue to be disturbed by motorized cross-country use. People engaged in hiking and other types of nonmotorized recreation would also continue to be affected. Conflicts between ranchers/permittees and motorized cross-country users would not be addressed by this alternative. These conflicts could diminish the social well-being of affected individuals.

The environmental advocacy groups and many of the people associated with these groups would not support current management because they believe it does not sufficiently protect the resources on public lands. The condition of the resources on public lands is important to these people because they value these resources for recreation, wildlife, scenic and spiritual qualities, and a variety of other reasons.

Increasing numbers of people in the West and across the country believe that cross-country vehicle management should place more emphasis on protecting natural resources. This alternative is not consistent with these attitudes.

Alternative 1

Under this alternative, all motorized cross-country vehicle use would be prohibited with no exceptions, except for a limited (50 feet) camping corridor. This alternative is most responsive to the desires of individuals and groups who feel motorized vehicle use on public lands should be limited to roads and trails with very limited exceptions. Nonmotorized recreation users would benefit from a reduction in conflicts with motorized cross-country users, which could enhance their recreation experiences and social well-being. People who engage in motorized cross-country activities would lose that opportunity on public lands, which could diminish their social well-being. However, they would still be able to use their vehicles on roads and trails. Although little or no social impacts would occur to rural communities, this alternative is not consistent with the preference for leaving activities on public lands at their current levels.

This alternative would not allow aging people to substitute motorized cross-country travel for activities that require more mobility such as hiking or mountain biking. However, there is no clear evidence that this is what people would choose to do as they age. Exceptions for disabled access would not be allowed, which would negatively affect a small number of people whose satisfaction was dependent upon the opportunity to travel cross-country with a motorized vehicle.

Conflicts between motorized cross-country users and other types of recreationists would be addressed by this alternative, at least partly because noise levels in areas away from roads and trails would diminish. The quality of hunting would be enhanced for those who desire a nonmotorized experience. However, hunters would not be able to drive cross-country to retrieve game, which may be a concern for some. The quality of the recreation experience for those engaged in nonmotorized recreation would be enhanced. However, the exception of camping is so limited that it may not provide quality experiences for this activity. Reductions in conflict and the resulting enhanced recreation experience could result in increased levels of social well-being for affected individuals.

Conflicts between motorized cross-country users and ranchers/permittees would be addressed by this alternative, which could enhance the social well-being of the affected individuals. Permittees may be able to travel cross-country on permit-related business if the effects could be mitigated. However, the final decision would be up to the authorized officer on a case-by-case basis.

The environmental advocacy groups and many of the people associated with these groups may not feel this alternative goes far enough to protect the resources on

public lands because it does not deal with the issue of user-created roads and trails. The condition of the resources on public lands is important to these people because they value these resources for recreation, wildlife, scenic and spiritual qualities, and a variety of other reasons.

Increasing numbers of people in the West and across the country believe that cross-country vehicle management should place more emphasis on protecting natural resources. This alternative is consistent with these attitudes.

Alternative 2

The effects of this alternative would be similar to Alternative 1. However, exceptions would be allowed for game retrieval (in the eastern part of Montana), camping within 300 feet of each side of a road or trail, and disabled access.

This alternative would not allow aging people to substitute motorized cross-country travel for activities that require more mobility such as hiking or mountain biking, unless they qualify for disabled access. However, there is no clear evidence that this is what people would choose to do as they age. Exceptions for disabled access would allow off-road opportunities for a small but growing number of people. These exceptions would be allowed on a case-by-case basis.

Conflicts between nonmotorized and motorized hunters could continue due to the game retrieval exception, which could diminish the social well-being of affected hunters. There is some concern that the exceptions allowed for game retrieval would be difficult to enforce and some people would continue to drive anywhere they wanted.

There would be no effect to permittees in their use of motorized cross-country travel to administer their permit or lease.

Alternative 3

Under this alternative, in eastern Montana, North Dakota and South Dakota, all OHV use would be limited to roads and trails with exceptions for game retrieval, camping and disabled access. For eastern Montana, North Dakota and South Dakota, the effects would be very similar to Alternative 2. Western Montana would be left open for motorized cross-country travel and the effects there would be similar to the No Action Alternative. The exceptions would be the Lolo National Forest and the Missoula Field Office where motorized cross-country travel is already restricted. However, motorized access for game retrieval would be restricted and some conflicts reduced, which could enhance the social well-being of affected hunters.

Alternative 4

Under this alternative, all OHV use would be seasonally restricted to roads and trails with exceptions for game retrieval, camping and disabled access. When areas are closed, nonmotorized recreation users could benefit from a reduction in conflicts with motorized cross-country users, which could enhance their recreation experiences and social well-being. Motorized cross-country vehicle users would lose the opportunity to participate in that activity on public lands during the spring and fall, which could diminish their social well-being. However, these motorized cross-country opportunities would still be available during the other seasons. Although no social impacts would occur to rural communities, this alternative is not consistent with the preference for leaving activities on public lands at their current levels.

During the winter and summer seasons, this alternative would facilitate the transition of the aging population from activities such as hiking or mountain biking to less strenuous activities such as motorized cross-country use. However, there is no clear evidence that people would choose to make this type of transition as they age. Exceptions for disabled access would allow motorized cross-country opportunities for a small but growing number of people. These exceptions would be allowed on a case-by-case basis.

During the times of highest use in eastern Montana, conflicts between motorized cross-country users and other types of recreationists would be addressed by this alternative, at least partly because noise levels in areas away from roads and trails would diminish. The quality of hunting would be enhanced for those who desire a nonmotorized experience. There is some concern that the exceptions allowed for game retrieval and rancher activities related to the management of a permit would be difficult to enforce, and some people would continue to drive anywhere they wanted. To the extent that conflict is reduced and the resulting recreation experience enhanced, increased levels of social well-being could result.

During the times of highest use in western Montana, people engaged in hiking and other types of nonmotorized recreation would continue to be affected by conflicts with motorized cross-country users. Noise from vehicles and related conflicts would continue and, perhaps, increase in the future as the number of people recreating on public lands increases. This could diminish the social well-being of affected individuals.

Conflicts between ranchers/permittees and motorized cross-country users would be reduced during the fall and spring, but would continue to occur during the summer months. To

the extent that conflict is diminished, this alternative would enhance the social well-being of affected individuals.

The environmental advocacy groups and many of the people associated with these groups would not feel this alternative goes far enough to protect the resources on public lands because it closes roads seasonally rather than year-long, and it does not deal with the issue of user-created roads and trails. The condition of the resources on public lands is important to these people because they value these resources for recreation, wildlife, scenic and spiritual qualities, and a variety of other reasons.

Increasing numbers of people in the West and across the country believe that off-road vehicle management should place more emphasis on protecting natural resources. This alternative is consistent with these attitudes.

There would be no effect to permittees in their use of motorized cross-country travel to administer their permit.

Civil Rights

No civil rights effects associated with age, race, creed, color, national origin or sex have been identified.

Environmental Justice

During the course of this analysis, no alternative considered resulted in any identifiable effects or issues specific to any minority or low-income population or community. The agencies have considered all input from persons or groups regardless of age, race, income status, or other social and economic characteristics.

Cumulative Effects

The expected increase in study area population and related increase in both motorized and nonmotorized recreation activities, particularly in western Montana, would, in general, lead to more conflicts among recreationists. The loss of opportunities for nonmotorized users due to increases in conflict that occur on trails that are open to both motorized and nonmotorized users would be at least partially offset by the enhanced opportunities for nonmotorized recreation available under Alternatives 1, 2 and 4, and in eastern Montana, North Dakota and South Dakota under Alternative 3. Under Alternative 3, this offsetting effect would not occur in western Montana.

Although very little of the motorized recreation use actually occurs off roads and trails, the fact that cross-country travel has gradually been restricted on most public lands in the study area (see Recreation cumulative analysis) would add to some motorized recreationist concerns regarding control and management of public lands. Specifically, they may feel that public land managers are not listening and/or responding to their wishes to keep public lands open to motorized use. All alternatives except the No Action Alternative would add to these feelings.

ECONOMICS

AFFECTED ENVIRONMENT

Introduction

To evaluate the economic conditions, the entire states of Montana, North Dakota and South Dakota have been considered. All counties of North Dakota and South Dakota are included in this evaluation, even though some of the counties may not be affected by this EIS/plan amendment.

This section presents trends in employment and earnings by state, trends in per capita income by state, a summary of the economic trends, sales of new motorcycles and ATV's by state, per vehicle expenditures by OHV users, and trends in truck, motorcycles and ATV registration by state.

Economic Conditions

Employment Trends in Montana from 1987-1996: During this ten-year period, the largest number employed was in the Services sector, followed by the Retail and Government sectors. The number employed was much smaller for all other sectors. In terms of employment growth, all sectors of the economy showed positive employment growth rates during this ten-year period except for the Mining sector, which had a 1.4% per annum decline in employment. The Construction sector had the largest employment growth rate at 7.6% per year. Agriculture, Retail Trade, and Services had employment growth rates slightly greater than 4% per year. The remaining sectors (Manufacturing, Finance, Wholesale Trade, and Transportation/Public Utilities) had employment growth rates ranging from 1.2% to 2.4% (USDC 1998a and 1998c).

Trends in Earnings in Montana from 1987-1996: To accurately compare earnings across the ten-year period, all earnings have been adjusted to 1996 dollars using the GDP Implicit Price Deflator (USDC 1998c). Earnings are defined to be labor and proprietors' earnings. The Services and Government sectors had earnings in excess of $1.8 billion. All other industries had earnings ranging from $40 million to approximately $1 billion. In terms of earnings growth, the Construction sector had the highest growth rate at 6.7% per year. The Mining sector had the only negative growth rate, with 0.5% decline in earnings per year. The

Finance and Services sectors had industry earnings growth of approximately 5% per year. All other sectors had earnings growth ranging from approximately 1% to 3.6% (USDC 1998a and 1998c).

Employment Trends in North Dakota from 1987-1996: Similar to trends in Montana, the largest number employed in North Dakota was in the Services sector, followed by the Retail and Government sectors. The number employed was much smaller in all other sectors. In terms of employment growth, all sectors of the North Dakota economy showed positive employment growth rates during this ten-year period except for the Mining sector, which had a 0.8% per annum decline in employment. The Agricultural sector had the largest employment growth rate at 5.3% per year. Manufacturing had employment growth of 4.2%, which was the second highest during this period. Construction and Services had employment growth of 3.8% and 3.7%, respectively. Retail Trade and Transportation had employment growth of 2.8% and 2.1%, respectively. All other sectors (Wholesale Trade, Finance, and Government) had growth rates of 1% or less during the ten-year time period (USDC 1998a and 1998c).

Trends in Earnings in North Dakota from 1987-1996: All earnings figures have been adjusted to 1996 dollars using the GDP Implicit Price Deflator (USDC 1998c). Earnings are defined to be labor and proprietors' earnings. The Services and Government sectors had earnings in excess of $1.5 billion. All other industries had earnings ranging from $30 million to approximately $800 million. In terms of earnings growth, the Manufacturing sector had the highest growth rate at 4.9% per year. As was found in Montana, the Mining sector had the only negative earnings growth rate, with 0.2% decline in earnings per year. Services, Construction, and Finance had earnings growth ranging from 3.6% to 3.8%. Retail Trade, Wholesale Trade, and Transportation had earnings growth ranging from 1.6% to 1.9%. Government experienced earnings growth of only 0.7% during this time period (USDC 1998a and 1998c).

Employment Trends in South Dakota from 1987-1996: Consistent with Montana and North Dakota, the largest number employed was in the Services sector, followed by the Retail and Government sectors. As in Montana and North Dakota, all sectors of the South Dakota economy showed positive employment growth rates during this ten-year period except for the Mining sector, which had a 1.5% per annum decline in employment. The Manufacturing sector had the largest employment growth rate at 5.5% per year. Agriculture had employment growth of 4.7%, which was the second highest during this period. Construction and Services were ranked third and fourth, with employment growth of 4.7% and 4.4%, respectively. Retail Trade and Finance had employment growth of 3.7% and 3.3%, respectively. Transportation (2.5%), Wholesale Trade (1.6%) and Government (0.5%) experienced the lowest employment growth in South Dakota during the time period (USDC 1998a and 1998c).

Trends in Earnings in South Dakota from 1987-1996: Earnings figures have been adjusted to 1996 dollars using the GDP Implicit Price Deflator (USDC 1998c). Earnings are defined to be labor and proprietors' earnings. As in Montana and North Dakota, the Services sector had the largest earnings, approximately $2.5 billion. The Services sector also had the top ranked earnings growth at 6% per year during the time period analyzed. Manufacturing (5.9%), Agriculture (5.2%), Finance (5.3%) and Construction (5.0%) had earnings growth that were at least 5% per year. As was found in Montana and North Dakota, the Mining sector had the only negative earnings growth rate, with 1.1% decline in earnings per year. Retail Trade and Wholesale Trade had earnings growth of approximately 3%. Transportation and Government had the lowest positive growth rates, with growth rates of 1.9% and 1.6%, respectively (USDC 1998a and 1998c).

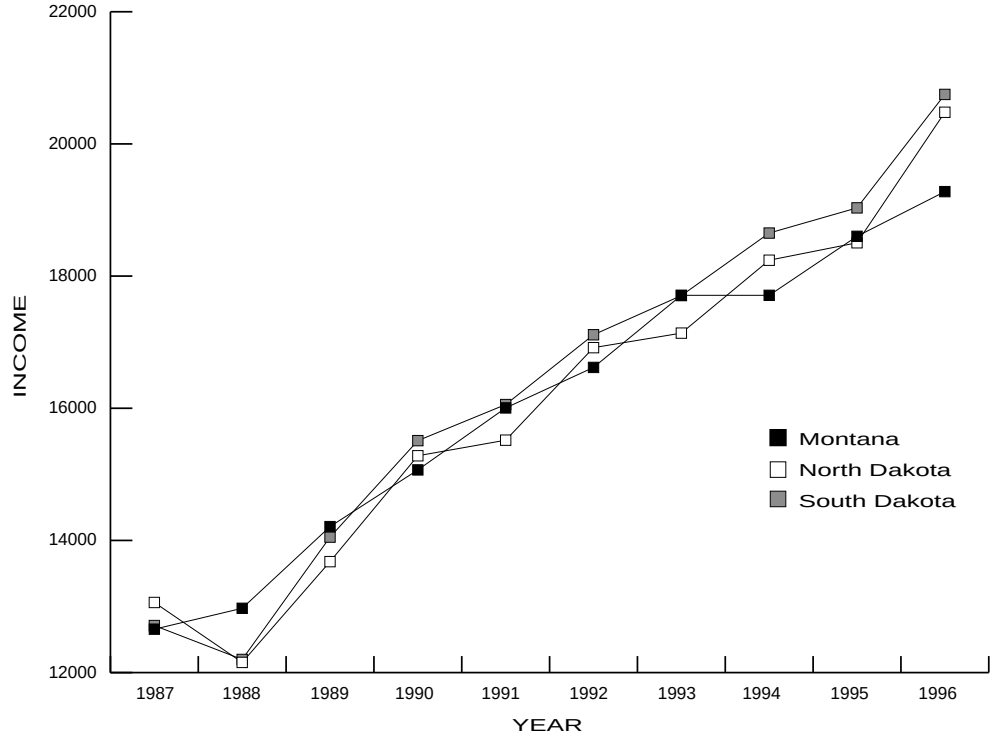
Trends in Per Capita Income from 1987-1996: All three states have shown moderate real per capita income growth. All income figures have been adjusted for inflation. For Montana, the per capita income growth rate was 1.7% per year. North Dakota and South Dakota had identical per capita income growth rates of approximately 2.3% per year. By 1996, Montana had a per capita income level that was approximately $1,200 lower than North Dakota and $1,400 lower than South Dakota. Figure 3.2 displays real per capita income for the three states affected by this draft EIS/plan amendment (USDC 1998a and 1998c).

Summary of Economic Trends for Montana, North Dakota and South Dakota

In general, most economic sectors experienced moderate employment and earnings growth during the ten-year period analyzed. The only exception was the Mining sector, which experienced negative growth rates in employment and earnings. This was due to declining metal commodity prices during this time period.

The Services sector is the largest employer and generator of earnings in Montana, North Dakota and South Dakota. In terms of growth rates, the Services sector outgrew all other economic sectors in South Dakota. In Montana and North Dakota, the growth rate in the Services sector was at least 4%. In general, these economies are following the national trend of the Services sector being the largest employer and generating high employment and earnings growth rates.

Figure 3.2
Per Capita Income by State, 1987-1996



Off-Highway Vehicle Economic Information

Sales of New Machines Used Off-Highway: Table 3.2 displays the sales of new ATV's, motocross bikes and enduros from 1990 to 1998. The annual sales growth rate for Montana was 6.7%. In North Dakota there was a 10.3% annual sales growth rate. In South Dakota the annual growth rate was 8.5%.

Table 3.2
Sales of New ATV's, Motocross Bikes and Enduros

Year	*Montana*	*North Dakota*	*South Dakota*
1990	2,700	900	1,200
1991	2,600	800	1,400
1992	3,200	900	1,300
1993	3,500	1,200	1,700
1994	NA	NA	NA
1995	3,500	1,534	1,842
1996	3,985	1,496	1,852
1997	4,260	1,674	2,344
1998	4,539	1,772	2,393

Source: 1990-1993 provided by Motorcycle Industry Council; 1995-1998 provided by American Honda.
NA denotes data is not available.

OHV Expenditures: Table 3.3 displays OHV (trucks, off-road motorcycles, and all-terrain vehicles) expenditures. OHV users expend approximately $1,460 per vehicle per year during off-highway vehicle use (Sylvester 1995). The largest expenditure is for gas and oil products, accounting for 47% of the total expenditure for the year. Equipment rental and purchase (15.6%), lodging (14.5%), and food and beverages (12.2%) combined account for approximately 42% of the total expenditure. The remaining five categories account for approximately 11% of the total expenditure.

Table 3.3
OHV Expenditures per Vehicle per Year

Expenditure Category	*Expenditure ($)*	*Percent of Total*
Lodging	211.31	14.5
Food & Beverages	177.56	12.2
Gas & Oil	686.36	47.0
Equip. Rental & Purchase	227.86	15.6
Clothing	18.13	1.2
Film, Gifts & Souvenirs	17.19	1.2
Other Entertainment	34.40	2.4
Entrance & Event Fees	15.78	1.1
Other	71.76	4.9
Total	$1,460.34	100.0%

Trends in Vehicle Registration: Table 3.4 displays the number of registered trucks, motorcycles, and ATV's in Montana, North Dakota and South Dakota during 1990 to 1998. All vehicle registration information was provided by the motor vehicle divisions in the respective states. The ATV and motorcycle registration information presented may be an understatement of the total number of motorcycles and ATV's in the three-state area. Motorcycles and ATV's are used as work equipment on farms and ranches and might not be registered. For South Dakota, the number of registered trucks and ATV's was estimated.

Trucks, motorcycles and ATV's can be considered the most likely vehicles used for off-highway use (Sylvester 1995). Based on a telephone survey conducted by the Bureau of Business and Economic Research at the University of Montana, Sylvester (1995) reports that approximately 9% of the registered trucks, 9% of the registered motorcycles, and 100% of the ATV's are used in off-highway situations. Based on the percentages reported by Sylvester and the registration information presented in Table 3.4, the following table was developed (Table 3.5).

Table 3.4 Number of Registered Vehicles

	Montana		*North Dakota*			*South Dakota*		
Year	*Trucks*	*ATV's & Motorcycles*	*Trucks*	*Motorcycles*	*ATV's*	*Trucks*[1]	*Motorcycles*	*ATV's*[1]
1990	268,466	7,399	170,853	20,113	2,414	204,671	23,719	2,863
1991	265,884	8,404	168,658	19,121	2,054	204,221	24,133	3,134
1992	274,512	10,020	169,942	18,030	2,568	211,713	23,389	2,998
1993	291,038	11,729	173,045	17,498	2,651	219,769	26,173	3,542
1994	295,373	13,165	177,342	17,026	3,468	227,195	25,822	NA
1995	299,104	14,072	178,956	16,338	3,375	230,961	25,155	3,735
1996	299,341	15,352	180,527	15,738	4,219	232,354	24,704	3,749
1997	303,425	16,898	180,997	15,319	3,894	237,425	24,561	4,417
1998	304,696	18,953	182,430	15,372	2,644	NA	NA	4,484

NA denotes data is not available.
[1]Estimated values.

Table 3.5 Estimated Number of Vehicles Used Off-Highway

	Montana		*North Dakota*			*South Dakota*		
Year	*Trucks*	*ATV's & Motorcycles*	*Trucks*	*Motorcycles*	*ATV's*	*Trucks*	*Motorcycles*	*ATV's*
1990	24,162	7,399	15,377	1,810	2,414	18,420	2,135	2,863
1991	23,930	8,404	15,179	1,721	2,054	18,380	2,172	3,134
1992	24,706	10,020	15,295	1,623	2,568	19,054	2,105	2,998
1993	26,193	11,729	15,574	1,575	2,651	19,779	2,356	3,542
1994	26,584	13,165	15,961	1,532	3,468	20,448	2,324	NA
1995	26,919	14,072	16,106	1,470	3,375	20,786	2,264	3,735
1996	26,941	15,352	16,247	1,416	4,219	20,912	2,223	3,749
1997	27,308	16,898	16,290	1,379	3,894	21,368	2,210	4,417
1998	27,423	18,953	16,419	1,383	2,644	NA	NA	4,484

NA denotes data is not available.

For Montana, the estimated number of trucks used in off-highway applications increased from 24,162 to 27,423 during the years 1990 to 1998. In Montana, ATV's and motorcycle are not reported separately. The ATV and motorcycle group increased substantially from 7,399 in 1990 to 18,953 in 1998.

In North Dakota, the estimated number of trucks used off-highway increased from 15,377 in 1990 to 16,419 in 1998. The number of motorcycles used off-highway decreased by approximately 500 motorcycles. Estimated ATV's used off-highway showed a steady increase from 1990 to 1996. By 1998, the estimated ATV's used off-highway had declined to 2,644.

In South Dakota, trucks used off-highway increased from 18,420 in 1990 to 21,368 in 1997. Estimated motorcycles used off-highway showed an increase of only 75 vehicles during the eight year time period. Estimated ATV's used off-highway increased by 1,621 vehicles.

ENVIRONMENTAL CONSEQUENCES

The effects of the alternatives were analyzed for Montana, North Dakota and South Dakota. All counties for each state were included in the impact analysis even though some of the counties may not contain FS or BLM land.

Economic impacts were estimated at the state level by vehicle type. Two vehicle types were analyzed: OHV's (off-highway motorcycles and ATV's) and trucks used in off-highway applications. For the economic analysis, Alternatives 1 through 4 would affect vehicle use equally; therefore, they will be considered as one alternative. Economic impact results will be presented for the No Action Alternative and for the action Alternatives 1 through 4.

This section will present projected number of vehicles, the economic impact model, and results.

Projected Number of Vehicles

Figures 3.3 through 3.5 display the actual and projected numbers of OHV's and trucks used in off-highway applications. Overall, there is an upward trend in the total numbers of OHV's and trucks in the three states. Between the years 2000 and 2015, the three states will experience population increases according to the U.S. Bureau of the Census (USDC 1998b). Since the projections are based on population, the upward trend in OHV's and trucks is expected. A separate study also estimated increased off-road driving for the Rocky Mountain area (Cordell and others 1999).

Figure 3.3
Actual and Projected Number of OHV's and Trucks
MONTANA

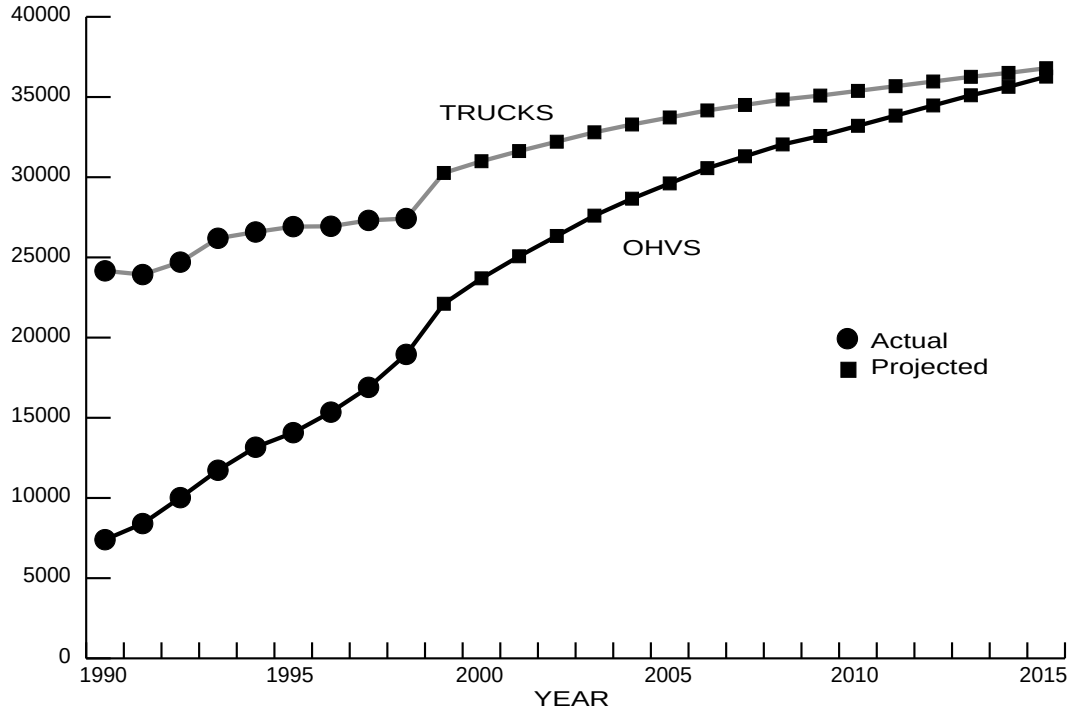


Figure 3.4
Actual and Projected Number of OHV's and Trucks
NORTH DAKOTA

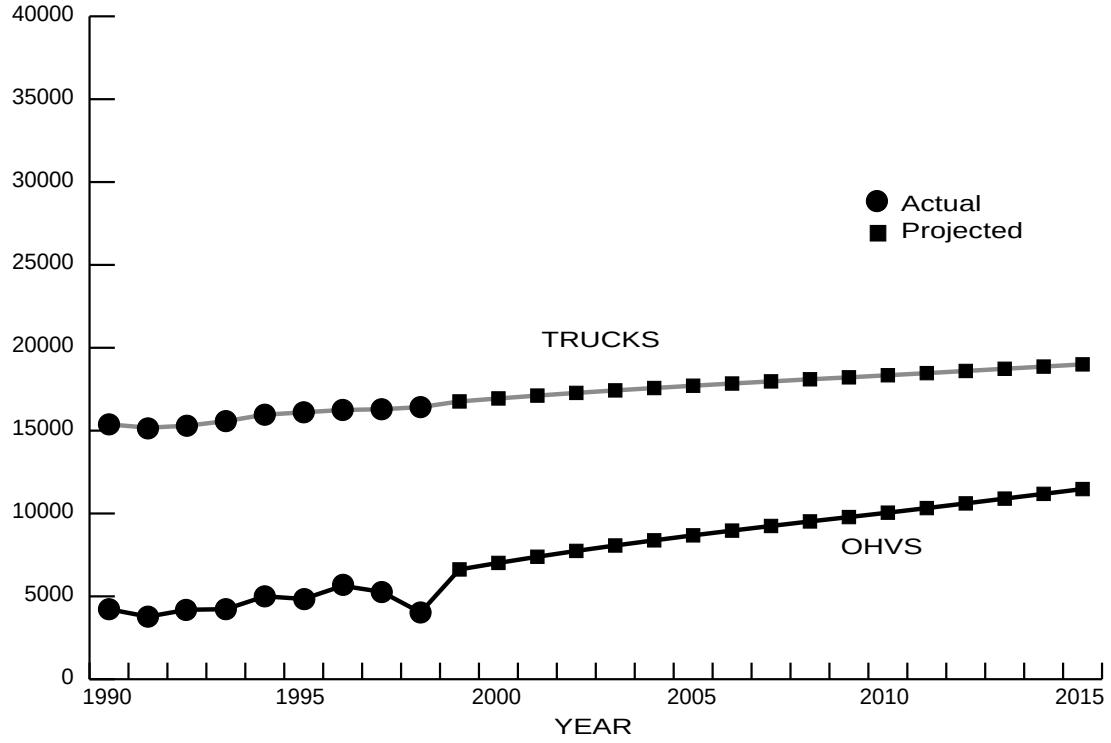


Figure 3.5
Actual and Projected Number of OHV's and Trucks
SOUTH DAKOTA

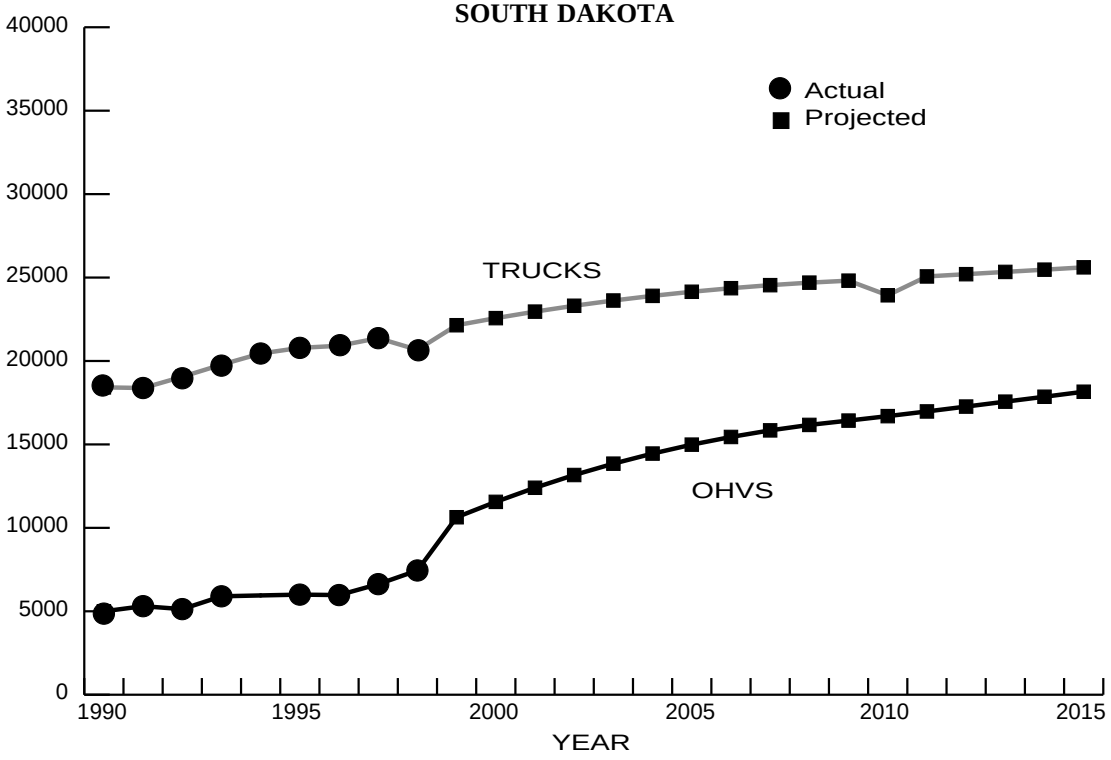


Table 3.6 Projected Number of OHV's and Trucks for the Years 2005 and 2015						
	Montana		*North Dakota*		*South Dakota*	
Vehicle Type	***Year 2005***	***Year 2015***	***Year 2005***	***Year 2015***	***Year 2005***	***Year 2015***
OHV's	29,614	36,272	8,681	11,474	14,987	18,158
Trucks	33,727	36,797	17,710	18,998	24,149	25,612

Table 3.7 Estimated Number of Vehicles Affected by the Proposed Alternatives for 2005 and 2015						
	Montana		*North Dakota*		*South Dakota*	
Vehicle Type	***Year 2005***	***Year 2015***	***Year 2005***	***Year 2015***	***Year 2005***	***Year 2015***
OHV's	297	363	87	115	150	182
Trucks	337	368	177	190	241	256

It is assumed that approximately 1% of OHV users actually ride cross-country off roads and trails (see recreation section). This 1% would be impacted by the implementation of Alternatives 1 through 4. In general, the number of vehicles affected by any of the proposed alternatives is quite small (Table 3.7).

Economic Impact Model

Input-output analysis was used to estimate employment and income effects. Input-output analysis is basically an accounting system that describes dollar or volume flows of commodities between all sectors of an economy. IMPLAN Pro, an input-output modeling system, was used to estimate input-output models for each state using 1995 economic data, the most recent IMPLAN data available (Minnesota IMPLAN Group, Inc. 1997).

No Action Alternative

The No Action Alternative assumes that there would be no effect on vehicles used in off-highway applications. The projected number of vehicles for the years 2005 and 2015 were displayed in Table 3.6 above. The jobs and employee compensation impacts shown in Table 3.8 below are for the years 2005 and 2015. The number of jobs and level of employee compensation includes the direct, indirect and induced impacts that result from the number of vehicles used in off-highway applications in the three states.

In the year 2005, there would be approximately 950 jobs in North Dakota attributable to OHV's and trucks, with approximately $14 million in employee compensation. In South Dakota, there would be approximately 1,770 jobs and $21 million in employee compensation attributable to OHV's (off-road motorcycles and ATV's) and trucks. OHV's (off-road motorcycles and ATV's) and trucks would have the largest influence in Montana, with approximately 2,350 jobs and $33.5 million in employee compensation.

In the year 2015, the jobs and employee compensation effects have increased due to the projected increases in OHV's and trucks. An estimated 1,100 jobs in North Dakota, 1,980 jobs in South Dakota, and 2,700 jobs in Montana are attributable to OHV's and trucks. Employee compensation is approximately $16 million in North Dakota, $23.7 million in South Dakota, and $38.5 million in Montana.

Alternatives 1 through 4

Alternatives 1 through 4 are combined for the economic analysis. Table 3.9 displays the resulting economic effects attributable to these alternatives. The economic effects estimated are based on the assumption that 1% of the off-road vehicles would stop being used if any action alternative is implemented. The estimated economic effects are dependent upon the actual number of vehicles affected. If more or less than 1% of the vehicles are affected, the economic impacts would change accordingly.

Table 3.8 Employment and Income Impacts for No Action Alternative

		No Action			
		Year 2005		*Year 2015*	
State Affected	***Vehicle Type***	***Jobs***	***Emp. Comp.***	***Jobs***	***Emp. Comp.***
Montana	OHV's	1,100	$15,624,000	1,350	$19,137,000
	Trucks	1,250	$17,794,000	1,370	$19,414,000
	Total	2,350	$33,419,000	2,710	$38,551,000
North Dakota	OHV's	310	$ 4,573,000	410	$ 6,044,000
	Trucks	640	$ 9,329,000	680	$10,008,000
	Total	950	$13,902,000	1,090	$16,052,000
South Dakota	OHV's	680	$ 8,119,000	820	$ 9,837,000
	Trucks	1,090	$13,083,000	1,160	$13,876,000
	Total	1,770	$21,203,000	1,980	$23,713,000

Note: The OHV's category consists of off-road motorcycles and ATV's.

Projections for the year 2005 indicate that a reduction of approximately 9 jobs in North Dakota, 18 jobs in South Dakota, and 24 jobs in Montana would occur. Employee compensation would be reduced by approximately $139,000 in North Dakota, $212,000 in South Dakota, and $344,000 in Montana. The employment and income reductions occur in sectors of the economy, such as hotel and lodging, restaurants, and gas stations, as well as others (see Table 3.3 for the OHV expenditure profile).

In the year 2015, the estimated jobs and employee compensation effects are displayed in Table 3.9. In North Dakota, the job reduction due to the 1% decrease is approximately 11 jobs. The corresponding reduction in employee compensation in North Dakota is approximately $161,000. In South Dakota, the job loss is estimated to be 20 jobs, with employee compensation reductions of approximately of $237,000. In Montana, the job loss is approximately 27 jobs, with employee compensation reductions of approximately $386,000. Once again, employment and income reductions occur in economic sectors, such as the hotel and lodging sector, restaurants, and gas stations, as well as others (see Table 3.3 for the OHV expenditure profile). The probability of this occurring is slim or none.

Table 3.9 Change in OHV and Truck-Related Employment and Income Impacts Between No Action and Alternatives 1 through 4

		Alternatives 1-4			
		Year 2005		*Year 2015*	
State Affected	***Vehicle Type***	***Jobs***	***Emp. Comp.***	***Jobs***	***Emp. Comp.***
Montana	OHV's	-11	-$156,000	-13	-$191,000
	Trucks	-13	-$178,000	-14	-$194,000
	Total	-24	-$344,000	-27	-$386,000
North Dakota	OHV's	-3	-$ 46,000	-4	-$60,000
	Trucks	-6	-$ 93,000	-7	-$100,000
	Total	-9	-$139,000	-11	-$161,000
South Dakota	OHV's	-7	-$ 81,000	-8	-$98,000
	Trucks	-11	-$131,000	-12	-$139,000
	Total	-18	-$212,000	-20	-$237,000

Note: The OHV's category consists of off-road motorcycles and ATV's.

Cumulative Effects

Vehicle registration information indicates that ownership of OHV's and trucks has substantially increased during the past decade. This trend is expected to continue given the expected population growth projected by the U.S. Census Bureau. With the expectation of increasing use, the potential of motorized cross-country travel in the future would continue to grow.

CULTURAL RESOURCES

AFFECTED ENVIRONMENT

Introduction

Cultural resources is a broad term that refers to cultural properties and traditional lifeway values. A cultural property may be the physical remains of archaeological, historic or architectural sites and/or a place of traditional cultural use. Traditional lifeway value refers to the connection between the landscape and a group's traditional beliefs, religion or cultural practice. Because these resources are nonrenewable and easily damaged, laws and regulations exist to help protect them.

The National Historic Preservation Act (NHPA) and its implementing regulations require that federal agencies consider the effects of their undertakings on historic properties. The term historic properties refer to cultural properties that have been determined eligible for the National Register of Historic Places (NRHP). Federal agencies must consider American Indian traditional use, belief system, religious practices and lifeway values as directed by the Archeological Resources Protection Act of 1979 (ARPA), the NHPA, the Native American Graves Protection and Repatriation Act (NAGPRA) and the American Indian Religious Freedom Act (AIRFA). Traditional American Indian cultural properties and natural features are potentially eligible to the NRHP. Contemporary use sites for traditional or cultural purposes are provided protection under AIRFA. Additionally, rights reserved under treaties may possess an inherent measure of resource protection.

Federal agencies consider the effects of their management activities on historic properties by first conducting a field survey to locate cultural properties. As a result of these inventories, over 26,000 cultural properties have been recorded on public lands administered by the BLM and FS in Montana, North Dakota and South Dakota. Of these, 2,323 are considered eligible for nomination to the National Register and 358 are actually listed on the Register. The remainder have either been determined not eligible or have not been evaluated.

The over 26,000 cultural properties occur on various landscapes and within all ecosystems represented in the analysis area, from the high alpine tundra and deep mountain forests of western Montana to the vast open grassland prairie and arid badlands of North Dakota and South Dakota. Site types range from prehistoric sites such as campsites, stone rings, quarries, eagle trapping lodges, and bison jumps to historic sites such as mining towns, homesteads, trading posts, military forts, and battlefields. Connecting these sites and environments are a network of historic and ancient Indian trails, explorer passages, military routes, railroad beds and wagon roads.

General Prehistoric and Historic Occupation

Information accumulated to date demonstrates the long and diverse series of human occupation that spans at least the last 15,000 years. Tribal groups known to use the analysis area prehistorically, historically, and currently include three affiliated tribes (Mandan, Hidatsa, and Arikara), Northern Cheyenne, Standing Rock Sioux, Assiniboine, Arapaho, Blackfoot, Crow, Oglala Sioux, Cheyenne River Sioux, Rosebud Sioux, Santee Sioux, Turtle Lake Chippewa, Chippewa-Cree, Salish, Kootenai, Pend d'Oreilles, Kalispel, Shoshone, Bannock, Gros Ventre and Kiowa Tribes.

Contact with European cultures altered the human occupation with the influx of European diseases, assimilation efforts, and the resultant demise of tribal cultural integrity with the onset of the reservation system. As non-Native Americans settled the area, they focused on occupations such as fur trapping and trading, mining, logging, ranching, homesteading and farming. Land ownership patterns developed over time, including the development of the FS and the BLM. Remnants of all these activities and events, both historic and prehistoric, can be found throughout the analysis area.

Existing Impacts of OHV Use

With the popularity of OHV use beginning just after World War Two and the availability of new, more versatile ATV's in the 1980's, access to more remote areas of public lands is possible. This new wave of motorized use has introduced more human presence in these remote areas and has left a mark on the landscape through the creation of introduced sounds, dust, smells, visual intrusions, and the pioneering of roads and trails.

Documented OHV impacts to cultural resources and or traditional use areas have occurred on the Kootenai, Beaverhead-Deerlodge, Gallatin and Lewis and Clark National Forests, Dillon Field Office and Dakota Prairie National Grasslands. These impacts to the archaeological record include artifact crushing and breakage, erosion, soil

compaction, and loss of ground cover. Introduction of audio, scent, and visual effects have altered some of the traditional use areas. Expanded access to remote areas has increased vandalism of the cultural resource and general degradation of the historic and natural landscape.

The nature of terrain and landscape crossed by OHV's is relative to both the type and number of sites impacted by this activity, and the type of effect the sites experience. For the Rocky Mountain Region, the mountainous terrain was as difficult to traverse for prehistoric and historic groups as it is for OHV users today. Traffic is concentrated along the corridors, that often follow streams and rivers, the same areas of high probability for cultural site locations. Rutting and erosion of the sites located along these corridors has impacted sites in the Beaverhead-Deerlodge National Forest. In the Whitetail-Pipestone area, OHV users have created a spiderweb network of trails that crisscross highly erosive granitic soils. This motorized cross-country travel has affected cultural sites and other resources to such an extent that the BLM and FS instituted an emergency area closure in the spring of 1998.

Mining towns clinging to the steep slopes of the mountains were accessed in the past by trails and roads used by OHV's today. This access has encouraged the pioneering of new trails to the more remote features of these ghost towns and has contributed to increased site collection and vandalism of historic trash dumps and buildings on the Lewis and Clark National Forest (R. Newton, pers. comm. 1999). This use of OHV's, especially ATV's, allows people to cover more ground off roads and trails and has increased exposure of the more remote cultural sites to vandalism and illicit collecting.

Substantial impact to cultural sites from motorized cross-country travel has been observed during the last twelve years along the drawdown zone of Lake Koocanusa on the Middle Kootenai River Archaeological District on the Kootenai National Forest. Archaeological monitoring of the sites from 1985 to 1993 revealed that 10% of the site within the district displayed damage from OHV use, with 777 incidents observed over the eight-year monitoring period. Two types of damage were recorded—illegal collecting and physical impacts from OHV travel across the sites. In numerous cases, both types of impacts were observed, with several sites exhibiting numerous/multiple incidents. These cultural sites are also greatly valued by the Confederated Salish and Kootenai as vestiges of their heritage, and the entire Lake Koocanusa is considered an area of high cultural sensitivity (Timmons 1999).

Trails are not necessary for travel upon the alpine plateaus of the Big Snowies on the Lewis and Clark National Forest. Observation of motorcycle use across cultural sites and the interruption of scenery, solitude and quiet was experienced and later reported to the FS by several people when they were hiking in the Big Snowy Wilderness Study Area. These same qualities were also sought by American Indians in the past who walked to these high plateaus, possibly seeking sacred places for spiritual guidance and leaving behind the cultural sites we record today. These sites, as well as traditional use areas, are easily damaged by OHV crossing, rutting, and subsequent erosion.

The Crow have long been concerned about the lack of respect many recreationists, particularly snowmobile users and OHV users, have shown the Crazy Mountains on the Gallatin and Lewis and Clark National Forests (Burton Pretty On Top, pers. comm. 1999). The mountains are considered especially sacred to the Crow and contain numerous religious and burial sites. Access from cross-country motorized use has interrupted the silence needed for traditional use practices and, in addition to the fumes and erosion, displays a lack of respect for this sacred area.

For the Northern Plains areas, the higher use and easy accessibility is evident by the greater number of sites found east of the Rockies. Bison kill sites, processing areas, campsites, tepee rings, and historic trails are a few of the numerous types of sites recorded in these open, rolling prairies easily accessed by OHV's. Quick and easy access to these locations has resulted in increased illicit collection, rutting, and erosion of many of these sites previously inaccessible except by foot or horse.

Proven to be an attraction for OHV users are the isolated buttes and the badlands of North Dakota and South Dakota. The Blue Buttes, located on the Dakota Prairie National Grasslands, are considered sacred to the Low Hat Clan of the Hidatsa and have been damaged to some degree by OHV use. The Hidatsa have used these buttes for hundreds of years as a fasting area where the qualities of remoteness, quiet and solitude are necessary for the traditional use activities. Four-wheel-drive trucks have recently been used to try and climb Chimney Butte, introducing noise and carbon monoxide into the area and leaving behind ruts and scars on the landscape (M. Floodman, pers. comm. 1999).

In the badlands, ATV and motorcycle tracks have been found along the Custer/Sully Trail. Ruts from the wagons accompanying Custer on his ill-fated trip to the Battle of the Little Bighorn in 1876 are still visible in the badlands and are threatened by increased OHV use of this area.

ENVIRONMENTAL CONSEQUENCES

Effects Common to All Alternatives

Prehistoric and historic cultural resources are a nonrenewable resource. Significant cultural resources have many values, including their use to gather scientific information on human culture, history, interpretive and educational value, values associated with important people and events of significance in our history, and often aesthetic value, as in a prehistoric rock art panel or an historic landscape. OHV use on public lands is one of many land use activities that have disturbed cultural resources within the analysis area.

Since the 1960's when recreational OHV's began to increase in popularity, there have been several studies conducted that documented the impacts of OHV use on the environment and, particularly, archaeological sites (USACOE 1992, Lyneis, Weide and Warren 1981). These impacts can be described as direct and indirect. Direct impacts include the crushing, breaking, and scattering of cultural material when OHV's are driven through and across a site, soil compaction from vehicle wheel pressure, and the intensification of soil erosion processes by the removal of protective ground cover such as vegetation and natural clutter, especially when ruts and trails are formed from repeated crossings. Much of this may happen without the OHV user even being aware of the damage. Many of the significant prehistoric sites found in Montana, North Dakota and South Dakota are very shallowly buried, with subsurface cultural material occurring as little as 30 to 40 cm below the present ground surface (M. Ryan, pers. comm. 1999). These sites are particularly vulnerable to disturbance from OHV use.

Of particular concern are archeological sites that are crossed by OHV user-created roads and trails. While most designed and planned roads and trails have been constructed in compliance with the various historic preservation laws, OHV user-created roads and trails are based on convenience, short cuts and/or challenge. As a result, these OHV pioneered tracks have begun to show up on archaeological sites in all parts of the analysis area and continued use of these roads and trails may continue to damage cultural resources.

Indirect impacts include the use of OHV's to access, and then loot or destroy archaeological sites. This form of destruction, which includes artifact collecting and souvenir hunting, is considered vandalism, and in comparison to the direct impacts described above, is intentional. Few prehistoric or historic resources are in themselves portable, for these cultural resources are rarely just the objects. The resource is the information contained in the cultural property, and the removal of objects from their original surrounding generally destroys that information. Illicit collection, such as souvenir and artifact collecting, and vandalism reduces the information to just the object—stone tools, arrowheads, glass bottles, etc. in a drawer, can or pocket. OHV use by vandals also allows quick, often undetected collection of the information/object and, to a larger degree, artifacts too heavy to transport by foot can now be transported by OHV and for much longer distances.

The incidence of vandalism and illicit collection is also very much influenced by the level of visitation and access to certain areas. Greater visitor use to some areas has led to the increase of vandalism, illicit collection, littering and disturbance to cultural sites. Vandalism has also increased in previously inaccessible areas, due in part to the fact that many visitors now use OHV's, which are capable of reaching these formerly isolated areas. Vandalism of rock art panels has increased considerably over the last twenty years on the Custer National Forest, which may be due in part to the increased availability of OHV's that can access these remote areas. While cultural properties situated along designated trails and road corridors can be signed, monitored, patrolled and protected, the impacts outside of these areas are largely uncontrolled and the extent of impact unknown.

Increased accessibility and visitation are also important criteria for evaluating the potential for destruction or vandalism of the traditional cultural, natural and historic landscapes. Most contemporary use, before the advent of OHV's, seemed to be limited to roads and trails and their immediate environs. Comparatively inaccessible sites were naturally protected from direct and indirect impacts. These previously inaccessible areas, often sought for their remoteness, solitude, and pristine qualities, have been directly affected by the introduction of motorized sounds, dust, smells, and pioneered roads and trails. Expanded access and increased visitation may impede some Indian groups in the practice of their traditional cultural use.

No Action Alternative

The use of a variety of OHV's has been a key factor in the increased recreational use of public lands over the last thirty years and the incremental increase of direct and indirect impacts to the cultural resource. Continued development of pioneered trails would increase the likelihood that more unrecorded and recorded sites would be damaged. Isolated cultural resources would continue to be more and more accessible as improvements in OHV technology improves, and thus become more vulnerable to direct impacts.

North Dakota, South Dakota and eastern Montana are highly accessible, either as a result of roads and trails or gentle topography. A substantial portion of the cultural

resources in these areas must be considered unprotected from pioneered roads and trails, and vandalism. This alternative does not offer any means of reducing that access, and current degradation of the heritage resources as a result of OHV traffic would continue. Impacts would continue to those sites known and unknown, which are now crossed by existing pioneered roads and trails.

Cultural resources along the drawdown areas around Lake Koocanusa on the Kootenai National Forest, and other places such as Delmo Lake on the Beaverhead-Deerlodge National Forest would continue to suffer damage as increased and cumulative use of these areas takes its toll on the cultural resource. Cultural resources located along the mountain corridors and on shallow soils would continue to be degraded from OHV traffic.

Traditional use areas in the Blue Buttes, Lake Koocanusa, and the Crazy Mountains would continue to be affected by the introduction of noise, dust, fumes, visual impacts, and increased access/visitation.

Alternative 1

If motorized cross-country travel is restricted yearlong, and if these restrictions are successfully enforced, any new direct damage to heritage resource from motorized cross-country travel should be reduced and limited. There should be no increase in new pioneered trails or roads that may damage sites.

Prohibiting cross-country travel could protect sites from vandalism where OHV's are used for access. If restrictions to roads and trails leave substantial, contiguous portions of public lands isolated from motorized travel, we would expect vandalism to diminish, for accessibility is one of the major factors in the rate of vandalism. This would restore some areas and landscapes to former remoteness and protect the natural solitude, isolation and quiet necessary for the continuation of traditional cultural practices.

Alternative 2

This alternative would essentially have the same effects to cultural resources as Alternative 1 with the exception that new user-created trails and roads may develop from the exception for disabled access. One-time game retrieval should not, in most instances, affect the cultural resources.

Alternative 3

Restricting use to certain areas does confer some protection of the cultural resource in those areas if adequately enforced and if the network of existing trails and roads does not increase or expand. There is reason to believe that the network of roads and trails would continue to increase in areas classed as less restrictive, and that currently recorded sites and previously inaccessible sites would continue to suffer from OHV damage (e.g., site damage along Lake Koocanusa).

Directing OHV use from one area to another may, while protecting some areas, concentrate the impacts to those areas not subject to the closure. While restricting use in the prairie areas, which may actually be easier to "heal" due to topography and climate, OHV users may be concentrated in the mountain areas where damage may be long term and sites concentrated along the very corridors where OHV's would be utilized more frequently. Increased visitation to these areas may also increase the incidence of vandalism in these areas. For this alternative, fragile areas along the lakes, river and stream corridors, may be subjected to more vandalism. By limiting access in all but the western forests, this alternative offers some protection for traditional cultural areas such as in the Crazy Mountains and Blue Buttes, but not for Lake Koocanusa.

Alternative 4

Restricting use seasonally would not provide any additional protection from direct or indirect effects of motorized cross-country travel on cultural resources. The amount of OHV damage that would occur to sites under this alternative is directly proportional to the amount of unrestrictive use of OHV's that continues and spreads to new areas. The network of roads and trails would continue to increase in these areas despite seasonal use restrictions, and new pioneered trails would continue to be created, opening up new areas to OHV use. While there may be fewer ruts created by crossing sites during wet seasons, this alternative has essentially the same effects to the cultural resources as the No Action Alternative.

Cumulative Effects

Cumulatively, the No Action Alternative would lessen the number and integrity of known and unknown sites within the analysis area and, along with natural factors and management activities, would, over time, lead to fewer intact cultural resources, and those remaining would continue to be degraded. Fewer and fewer areas appropriate and available for traditional cultural practices would remain.

Cumulatively, under Alternative 1, until site-specific travel planning is completed and the plans are implemented, some cultural damage could continue to occur. As these plans are developed, cultural resources along roads and trails would be inventoried and protected. Cultural resources located off these existing corridors would retain their relative site

integrity. Few cultural resources would be degraded as a result of cross-country motorized travel.

Under Alternative 2, the cumulative effects would be the same as Alternative 1, except that new user-created trails and roads could be developed from the exception for disabled access.

Cumulatively, Alternative 3 would lessen the number and integrity of known and unknown sites within the western forests and, along with natural factors and management activities would, over time, lead to fewer intact cultural resources, and those remaining may continue to be degraded.

Under Alternative 4, the cumulative effects would be the same as the No Action Alternative.

Comparison of Alternatives

The No Action Alternative and Alternative 4 would cause the greatest direct and indirect impacts to the cultural resources in the analysis area. These alternatives would lessen the number and integrity of known and unknown sites within the analysis area and, along with natural factors and management activities, would, in time, lead to fewer undisturbed cultural resources. Fewer areas appropriate and available for traditional cultural practices would remain. Historic and natural landscapes would be degraded.

Alternative 3 would cause direct and indirect impacts to the cultural resources and historic natural and traditional use landscapes located on the Kootenai, Flathead, and Bitterroot National Forests but would protect, in part, those cultural resources, traditional values and landscapes in the eastern forests and grasslands.

Alternative 1 and Alternative 2 offer the most protection for the cultural resources in the whole analysis area and ensure that places of importance for their natural and historic landscape and traditional use are preserved.

PALEONTOLOGICAL RESOURCES

AFFECTED ENVIRONMENT

Paleontological resources, fossils, are remains, traces, or imprints of plants and animals preserved in rocks of Earth's crust. Fossils allow the interpretation of ancient environments and environmental change and provide direct evidence of the origin and evolution of life.

Fossil-bearing strata in Montana, North Dakota and South Dakota are billions to thousands of years old, ranging from the Precambrian Eon to the Holocene Epoch. During the Precambrian and early Paleozoic, life arose and diversified. More recently, life has undergone a series of extinctions and major reorganizations.

Public lands of Montana, North Dakota and South Dakota hold richly fossiliferous strata that chronicle the history of life in North America. A growing interest in the lifestyles and sudden demise of dinosaurs draws specialist and amateur collectors alike to Cretaceous outcrops of eastern Montana (Judith River area) and western South Dakota (Grand River area). Off-highway travel, which poses a threat to fossiliferous outcrops, is not restricted in either area.

ENVIRONMENTAL CONSEQUENCES

No Action Alternative

Under this alternative, OHV operators would continue to have access to remote outcrops and collecting localities. These sites are vulnerable to destruction by off-road travel. Motorized cross-country travel allows vandalism of fossils that might otherwise be too heavy or awkward to pack out on foot.

Alternatives 1 and 2

Under these alternatives, motorized cross-country travel would not be allowed. Potential collectors could not reach remote fossil locations with the use of OHV's. In addition, unintentional destruction of fossils by OHV enthusiasts would be minimized or prevented.

Alternative 3

Under this alternative, motorized cross-country travel would be restricted in the plains and prairies, which are the most sensitive areas for paleontological resources. Impacts would be comparable to Alternatives 1 and 2. Although OHV use is permitted on the Kootenai, Flathead, and Bitterroot National Forests, such use is not expected to result in damage to or vandalism of paleontological resources.

Alternative 4

Under this alternative, motorized cross-country travel is permitted during the dry season (6/15-8/31) and when the ground is snow-covered or frozen (12/2-2/15). Impacts during the spring and summer would compare with the No

Action Alternative (i.e., damage and vandalism may result from OHV use). Minimal impacts are expected when the ground is frozen and snow-covered.

Cumulative Effects

Cumulative effects would be greatest under the existing management condition, that is, under the No Action Alternative. All other alternatives would restrict access to remote paleontological sites and would reduce cumulative effects. Alternatives 1 and 2 would provide the best protection (fewest cumulative impacts) for paleontological resources.

VEGETATION AND WEEDS

AFFECTED ENVIRONMENT

Vegetation

This section describes in more detail the characteristics of the three ecological regions discussed earlier in Chapter 3. These regions are the Rocky Mountain Region, the Great Plains Region, and the North American Prairie Region (Figure 3.1). In addition, this section describes invasive exotic weeds and native plant communities. Threatened, endangered, and sensitive plants are also discussed in this section.

Ecological Regions

Rocky Mountain Region: The Rocky Mountain Region can be subdivided into three provinces. The first is the Northern Rockies Province, which is characterized by rugged mountains separated by flat valley bottoms. Elevational relief within this province ranges from 3,000 feet to over 9,000 feet. Temperatures can be severe, but are often moderated by coastal influences. Precipitation is generally greater than the rest of the Rocky Mountain Region and averages between 16-100 inches annually. Most of the moisture comes in the fall, winter, and spring. Summers are relatively dry.

Soils are less rocky than surrounding mountain provinces in the west and have a distinct volcanic influence. The excellent soil conditions and precipitation result in lush vegetation, which more closely resembles the Pacific Northwest. Prior to European settlement much of this area was almost entirely forested. There is very little land higher than timberline and no lower timberline is evident naturally, but has been created by conversion to agriculture and other land conversion efforts. Today, the most common forest types are Douglas-fir, grand-fir and cedar-hemlock. A lush cover of ferns, forbs, and regenerating trees characterizes the forest understory.

The second province is the Middle Rockies. Elevations generally range from 3,000 feet to almost 11,000 feet. The BLM and FS lands are moderately steep to very steep mountains. The lower elevations include some gentler foothills. The climate is highly variable, depending on local elevation and aspect. In general, valleys are warmer and drier, with annual precipitation of 15-25 inches annually. Higher mountain ranges are cooler and precipitation is 70 inches or more annually, with 40-60% coming as snow.

The aridity and evaporation rates of the Middle Rockies sharply define forest and nonforest areas. Both upper and lower tree lines are common. Low and middle elevation forests on south and west facing slopes are dominated by sagebrush and semi-desert conditions. The opposite aspects typically consist of Douglas-fir and ponderosa pine. Lodgepole pine is common throughout this region on a variety of aspects. At higher elevations, Engelmann spruce and subalpine fir are the most common species.

The third province is the Southern Rockies, which is confined to south-central Montana and the Yellowstone Plateau. Elevations range from 5,000 feet to 11,000 feet and more. The climate is highly variable and depends on local elevation and aspect. Valleys are generally warmer and drier, with annual precipitation of 15-25 inches. Higher mountain ranges are cooler and precipitation is 40 inches or more per year, with the majority coming as snow.

The flora of this region is highly variable. Constant changes in elevation and aspect results in a large scale mosaic of conifer forests, hardwoods, and shrub/grasslands. Spruce and fir often dominate the highest elevation forests with lodgepole and aspen at middle elevations, and Douglas-fir in the lower forested zone. Other less common forest types include limber pine and whitebark pine.

Great Plains Region: Three provinces occur in this region. The Great Plains Province comprises most of eastern Montana and the western parts of North Dakota and South Dakota. It is characterized by rolling plains and tablelands and generally flat to moderate slopes. The badlands across the northern tier of central to eastern Montana and western North Dakota are exceptions. They range in elevation from below 2,000 feet to about 5,500 feet. Average annual precipitation ranges from 10-20 inches with 20-50% coming in the form of snow and the remainder as spring and summer thunderstorms. The vegetation is composed of a wide variety of grasses, forbs, small shrubs (sagebrush and rabbitbrush) and sometimes a few scattered trees. The lack of forested environments is due to the rain shadow effect of the Rocky Mountain Range to the west.

The Intermountain Semidesert Province covers a very small portion of south-central Montana just east of Yellowstone National Park. Elevations range from 3,700 and 4,700 feet. It is comprised of dissected plains, terraces and fans formed in shale, siltstone and sandstone overlain by some alluvium and lacustrine sediment. Annual precipitation ranges from 5-12 inches per year. The vegetation is composed primarily of sagebrush steppe and some foothills prairie.

The third province is the Great Plains Steppe. It covers the eastern portions of North Dakota and South Dakota except for an eastern strip. It has very little topographical relief that ranges from 1,000 to 2,000 feet in elevation. It is characterized by flat and rolling plains formed from glacial drifts and outwash plains, except south of the Missouri River where there are loess and sand deposits. Annual precipitation is between 15-20 inches, with 30-40% coming in the winter as snow. Drought is less frequent and severe than further west. Short and tall grass species comprise the vegetation. Woody vegetation is rare except for cottonwoods in the floodplains.

North American Prairie Region is the same as described earlier in Chapter 3.

Invasive Exotic Weeds

The invasion of native plant communities by exotic species is a threat nationwide with ecological and economic consequences (National Strategy for Invasive Plant Management). Weeds are spread by a multitude of ways: animals (livestock or wildlife), people hiking, bicycling, and all forms of motorized equipment, movement down streams, wind, etc. Each weed has its own set of characteristics that make transport by some methods more significant than others. The concern with OHV's is their potential to spread weeds. OHV's can get weed seed temporarily attached to them and then drop the seed in an area without weeds. Under experimental conditions with a pickup truck, it was determined that an average of 1,644 knapweed seeds were caught on the vehicle after backing 40 feet through an infested patch and then pulling back out. After driving one mile, 226 seeds or 14% were attached, and after ten miles, 138 seeds or 8% were still attached (Trunkle and Fay 1991). Sometimes, the use of OHV's destroys the vegetation and exposes the soil, which creates an opportunity for weeds to become established.

A review of weed inventory maps demonstrates the strong association of weeds with roads and trails. This is related to the common use by people and livestock that transport the seeds. In addition, these areas are kept perpetually disturbed through use. The roads and trails serve as the invasion corridors for many weeds, which then spread away from those locations. Due to the random nature of motorized cross-country travel, the spread of weeds to new locations is not easily detected.

Knapweed along a road in western Montana.

The impact of exotic invasive plants is tremendous on native plant communities, wildlife populations and habitats, and economics (Duncan 1997).

The term "noxious weed" has a specific legal meaning compared to invasive exotic weed. "Noxious" is a legally recognized term. It is an exotic plant designated at the federal, state or county level, that is established or may be introduced, which may render land unfit for agriculture, forestry, livestock, wildlife or other beneficial uses. When so designated, property owners/managers have a legal responsibility to prevent the propagation of that weed or manage it in accordance with a weed management plan. Some plants can be problematic but not be legally designated as noxious, thus the term invasive exotic is often used as a broader, more inclusive term, referring to problematic plants.

An estimated 930,000 acres or 5.1% of NFS lands are infested with noxious weeds in Montana, North Dakota and South Dakota. The BLM has an estimated 390,000 acres, or 4.5%, of infestation on public lands. The BLM acreage increased over four times between 1985 and 1996, demonstrating the rapid pace of the noxious weed invasion. The figures also indicate that a lot of land has not been infested yet. The acreage figures infested are dominated by a few species. Spotted knapweed, leafy spurge and St. John's wort account for 91% of the acreage, spotted knapweed accounts for 79% by itself, on NFS lands. Another 55+ species account for the remaining acreage. The weeds are not evenly distributed across all lands. On NFS lands, 87% of the acres infested are on the four western forests, the Kootenai, Flathead, Lolo and Bitterroot. Leafy spurge is the most common weed on federal lands in the Prairie Region and the eastern portion of the Great Plains Region.

A number of the species that have relatively few acres infested have the potential to be as problematic as spotted knapweed and leafy spurge, however through current prevention, detection and control efforts they have been limited to the current infestation levels. An example has been the management of rush skeleton weed in a cooperative effort between Lincoln and Sanders Counties, the Kootenai National Forest and Montana Department of Agriculture. The weed has been identified and treated at the level of numerous small spots, all less than a few acres, for many years now. The amount of time and money expended to keep rush skeletonweed contained is very high on a per acre basis, but it is protecting millions of acres of agricultural and wildlands from infestation. Prevention is the cheapest method of managing invasive exotics.

The FS and BLM have implemented a number of requirements as part of their prevention programs to minimize the spread of weeds by a wide range of activities. Requiring weed seed free forage for livestock used on national forest/grasslands and BLM lands is one. Other practices include weed seed free straw and seed mixes for erosion control and revegetation activities, and requiring the cleaning of equipment used off-road for logging, utility transmission work, special use permits, permittee equipment use, fire fighting equipment and others. The agencies are continuing to develop best management practices to be used in all different forms of land management activities to reduce the risk of new weed infestations and contain the spread of existing ones.

Native Plant Communities

Native plant communities are displaced when repeated OHV use occurs in a location, whether this use is occurring in a riparian zone or upland area. However the total amount of area affected is quite small considering the three-state area. It can have local site-specific ramifications, but they are beyond the scope of this decision. The removal of vegetation cover and root systems can lead to other resource damage such soil erosion, sedimentation in streams, etc., this issue is discussed in the aquatic and soils sections.

Threatened and Endangered Plants

Water Howellia: This plant occurs as a submerged or floating annual associated with lakes and ponds. The surrounding upland vegetation is typically a dense conifer forest. Most of the 106 occurrences on record in Montana are on the Flathead National Forest, all in Swan Valley (Lake and Missoula Counties). Some of them are limited access grizzly corridor zones behind locked gates where use is restricted by number of visits per week. The habitat of this plant is not conducive to OHV traffic, and no impacts from motorized cross-country travel are known or anticipated to occur.

Ute Ladies Tresses: None of the 11 occurrences in Montana are on BLM or FS land, though the Butte Field Office was involved in an interagency wetland project at one site that has been opened to hunting and other nonmotorized public use and was identified at one time as a possible land exchange. They are in a four-county area of the Jefferson River and confluent lower reaches of the Beaverhead, Gallatin, Madison and Ruby Rivers. Most Montana occurrences are on private land; a few are on State lands.

Western Prairie Fringed Orchid: There are three remaining large metapopulations of this threatened species. One occurs within the analysis area on the Sheyenne National Grassland. This species is associated with sedge meadows primarily within the tallgrass prairie biome. It occurs in the hummocky sandhills habitat association on the Sheyenne National Grassland. Across its range, the species is generally found in fire and grazing adapted grassland communities, most often on unplowed calcareous prairies and sedge meadows. It has also been documented in successional plant communities on disturbed sites. (USDA 1999a).

Maintenance of functional, dynamic tallgrass prairie is key to survival of the species. Disturbances such as fire, flooding, and grazing occurred historically and may be important for orchid regeneration. Precipitation and flooding events on the Sheyenne National Grassland influence extinctions and recovery of local orchid populations. (USDA 1999a).

Sensitive Plants

For the FS, a sensitive plant species is one that has been designated by the Regional Forester because of concern for population viability, as evidenced by: 1) significant current or predicted downward trends in population numbers or density; and/or 2) significant current or predicted downward trends in habitat capability that would reduce an existing species distribution. For the BLM, sensitive plants must: 1) be proven to be rare by proper study(s); 2) be proven to be imperiled by proper study(s); and 3) be documented on BLM surface. Sensitive species are not protected under the ESA. Their conservation is required, however, by FS policy (FS Manual 2670) and by BLM policy (Special Status Species Plants Policy), respectively. Currently, the BLM has 28 plant species designated as sensitive in Montana, North Dakota and South Dakota. The FS has 114 plant species designated as sensitive in Montana and 46 in North Dakota and South Dakota. The list of sensitive species is found in Appendix E. These species

occupy a wide range of habitats that include, but are not limited to, open grasslands, shrublands, forested areas, wetlands, rock outcrops, riparian areas, and specific substrates such as bases of shrubs. Many of these habitats are currently available and vulnerable to motorized cross-country travel.

ENVIRONMENTAL CONSEQUENCES

Introduction

The effects from OHV activities on vegetation and invasive weeds are very closely related and are discussed together in this section. Weed management has many components, and motorized cross-country travel is only one small part of it. Other management practices are outside the scope of this proposal and are dealt with through environmental analyses associated with those activities.

Effects Common to All Alternatives

Weeds: OHV travel has had numerous direct and indirect effects in relation to invasive weeds. Under all alternatives, weed spread on roads and trails will continue to occur. Indirectly, the establishment of weeds leads to numerous impacts to other resources. While no attempt is made to describe all the possible effects of each weed species, the following represents examples of the potential effects of weeds on other resources that are indirectly attributed to spread by OHV's.

Introduction and establishment of weeds can displace native species and plant communities which results in loss of species diversity and a change in the structure of the plant community (Tyser and Key 1988, Tyser 1992, Rice et. al. 1997). These changes then lead to changes to wildlife habitat. However, the amount of area of native plant community directly affected by cross-country OHV use is quite small considering the whole analysis area and cannot be measured at the scale of this analysis.

Other examples include poisoning of livestock that consume weeds. Sediment yield and surface runoff can increase in areas infested with spotted knapweed (Lacey et al. 1989). Another example is the alteration of fire behavior as a result of weed species. Cheatgrass cures out very early and leads to more frequent burning. Leafy spurge contains oil compounds that are highly flammable.

Threatened and Endangered Plants: Under all alternatives, there would be no effect to the threatened water howellia due to a lack of known or anticipated impacts of motorized cross-country travel on this species and its habitat. Under all alternatives, there would be no effect to the threatened Ute ladies tresses, as this species is not known to occur on FS or BLM lands within Montana, North Dakota and South Dakota.

Sensitive Plants: This proposal is programmatic in nature; therefore, the discussion of effects will be general and qualitative rather than quantitative. The following assessment does not consider, because of the programmatic nature of this evaluation and lack of site-specific information, individual species ecological or biological requirements. Individual species requirements would be addressed in site-specific project analyses. Potential site-specific effects of implementing any alternative, on any given species or habitat, would be evaluated in a second level, site-specific project analysis.

The criteria for evaluating potential effects to sensitive species are: 1) would implementation of the alternatives result in a loss of viability or distribution throughout the analysis area of the sensitive species; or 2) would implementation of the alternatives move sensitive species toward federal listing under the ESA. An assumption made here is that all regulations, policies, and direction of the FS and BLM would be followed with the implementation of any alternative; therefore, none of the alternatives, if fully implemented, would result in loss of viability of these species or move towards federal listing.

No Action Alternative

Weeds: This alternative has the greatest risk for expanding existing and introducing new weeds to BLM and FS lands. It retains the status quo for acres open (15.9 million acres) and seasons of use; therefore, the potential for OHV's to transport seed and create receptive seedbeds is the highest. The potential for creating new roads and trails exists and they provide excellent avenues for weed invasion, thus increasing the effects across all the resources. The potential is highest in areas with gentler slopes and open conditions. These conditions are much more common in the central and eastern portions of the analysis area.

The loss of native plant species and communities would continue as the weeds outcompete some of the native plants. This loss leads to a series of other indirect effects: the loss of wildlife habitat; increased erosion for some of the weeds; increased weed suppression costs; loss of forage production for livestock permittees; decreased economic outputs as the loss of forage and wildlife habitat continues. Current weed programs in both agencies are inadequate to stem the current rate of weed invasion and expansion; therefore, new populations of weeds only make this situation worse. Adverse economic effects resulting from losses of domestic and wildlife habitat would increase.

In addition to the effects described above, would be the need to apply additional amounts of suppression activities, such as herbicides, grazing sheep and goats for leafy spurge, pulling and grubbing to try and control the establishment of new weed infestations. The use of each of these techniques has its own set of environmental effects, such as the damage to nonweed vegetation with some herbicides, or using grazing animals. They also can create conflicts with other goals such as recovery of predators (e.g., wolves and grizzly bears).

Western Prairie Fringed Orchid: Motorized cross-country travel has the potential to eliminate or seriously affect populations of the orchid, either directly through the activity itself or indirectly through habitat modifications. For example, noxious weeds such as leafy spurge can be dispersed by OHV traffic and pose a serious threat to orchid populations on the Sheyenne National Grassland. Without any management of motorized cross-country traffic, these types of effects may continue to occur. The conclusion of effects of this alternative is May Affect, likely to adversely affect the western prairie fringed orchid.

Sensitive Plant Species: Motorized cross-country travel has the potential to directly and indirectly impact sensitive plant species. Directly, OHV's have the potential to crush, trample, or destroy sensitive plants. Indirect effects are a result of habitat alterations. These changes include increased bare soil, soil surface temperatures, soil compaction, runoff, erosion, and increased spread of and competition with noxious weeds. Under the No Action Alternative, these potential effects may occur. As stated before, existing regulations, policies, and direction of the FS and BLM would be followed with the implementation of this alternative. However, specific effects to sensitive plants cannot be determined without site-specific surveys. In the absence of additional surveys, the implementation of this alternative may impact individuals or habitat, but would not contribute to a trend towards federal listing or loss of viability to the population or species. This alternative has the greatest risk to sensitive plant species.

Alternatives 1 and 2

Weeds: Alternatives 1 and 2 and their overall effects are similar and will be discussed together. These two alternatives restrict OHV's to roads and trails with certain exceptions. The direct effects are a substantial reduction in the probability of introducing weeds by cross-country OHV use, because less vegetation and soil would be disturbed as a result of unplanned user-created trails and roads. Indirectly, the current detection and treatment of new infestations would be more effective, since the limited funds wouldn't have to be spread as thin.

Alternative 2 is slightly less effective because it has exceptions for big game retrieval, lessees or permittees to use equipment, and a corridor 300 feet wide each side of a road or trail for camping compared to 50 feet in Alternative 1. The effects are slight because of several factors. The acreage difference involved in the corridor along the road is relatively small, and the area within the 300-foot corridor would have travel on it concentrated primarily in areas traditionally used for dispersed camping and picnicking spots. The proximity of the infestations to a road or trail make detection and treatment much more likely. Some permittees/lessees are required to wash their vehicles to minimize the amount of seed transported off roads and trails. Travel for big game retrieval has more risk than permit holders (required to clean their vehicles) because no cleaning of the vehicle is required. However, there would only be one round trip during retrieval; therefore, relatively little vegetation and soil disturbance would result, which means any seed delivered to the site would not have a very conducive environment in which to become established.

Western Prairie Fringed Orchid: Under these alternatives, motorized cross-country travel would not be allowed with certain exceptions. Under Alternative 2, administrative use by federal employees, lessees, and permittees would also not be allowed in known orchid habitat without prior approval. The direct and indirect effects associated with motorized cross-country travel would be substantially reduced or eliminated. The conclusion of effects of this alternative is No Effect for the western prairie fringed orchid.

Sensitive Plant Species: Under these alternatives, motorized cross-country travel would not be allowed with certain exceptions. Administrative use by federal employees, lessees, and permittees would also not be allowed in known orchid habitat without prior approval under Alternative 2. These alternatives would greatly reduce or eliminate direct crushing, trampling, or destruction of sensitive plants. In addition, ongoing habitat alterations as a result of motorized cross-country travel would also be substantially reduced or eliminated. Although the potential for impacts to sensitive plants is very low, specific effects cannot be determined without site-specific surveys. In the absence of additional surveys, the implementation of either alternative may impact individuals or habitat but would not contribute to a trend toward federal listing or loss of viability to the population or species. Either of these alternatives would provide the greatest protection of sensitive species and their habitats.

Alternative 3

Weeds: This alternative has effects the same as Alternative 2 for the areas where OHV's are restricted, which involves

an estimated 6.5 million acres. Simply stated, the potential for weed spread by OHV's during motorized cross-country travel is greatly reduced. Alternative 3 has similar effects to the No Action Alternative for the areas where they are not restricted with two important differences. First, the areas open for motorized cross-country travel are in western Montana, except the Lolo NF and Missoula Field Office, which are already restricted. These lands are generally too steep and/or densely vegetated to be traversed by OHV's; therefore, much of the "open" acreage is not available to OHV use and is at minimal risk to weed spread. However, the areas that are not forested are often quite susceptible to weed invasion, as evidenced by the tremendous amount of spotted knapweed in the bunchgrass communities throughout much of western Montana. The second exception in comparing this alternative to the No Action Alternative is that BLM lands in the central and eastern part of Montana are at lower risk of weed infestation from motorized cross-country travel because: a) many of the parcels are landlocked by private owners and therefore, access is restricted; b) they have very little use by OHV's; c) the amount of weeds currently present or adjacent to some of these areas is quite low.

The areas that remain open to cross-country OHV travel will continue to see expanded weed spread due to the difficulty of detecting new weed infestations in remote, rarely traveled locations until they are well established and more expensive and difficult to eradicate, if it is still possible. Overall, this alternative has substantially less acreage at risk of weed invasion from OHV use than the No Action Alternative and Alternative 3, but more than Alternatives 1 and 2. See Table 3.1 for a comparison of acreages.

Western Prairie Fringed Orchid: Under this alternative, motorized cross-country travel would not be allowed with a few exceptions. Administrative use by federal employees, lessees, and permittees would be allowed under this alternative, which could potentially impact this species and its habitat; therefore, the conclusion of effects of this alternative is May Affect, not likely to adversely affect the western prairie fringed orchid.

Sensitive Plant Species: This alternative has effects similar to Alternative 2 for areas where motorized cross-country travel is restricted. For the open areas under this alternative, the effects are similar to those described in the No Action Alternative. The implementation of this alternative may impact individuals or habitat, but would not contribute to a trend toward federal listing or loss of viability to the population or species.

Alternative 4

Weeds: This alternative does not reduce the risk of any acres compared to the No Action Alternative, so the potential number of acres is the same. The open summer season (6/15-8/31) coincides with the seed production of most weed species; therefore, seed spread would occur. There is some benefit in that during this time period the soils are less likely to be rutted, displaced and disturbed; therefore, reducing the amount of potentially receptive seedbed. There is also some reduction of potential weed invasion through the restricted time frame just by the reduction in the number of trips that would be made. This is especially pertinent for areas where a substantial amount of use occurs during the hunting season. Overall effects are similar to the No Action Alternative.

The winter open period is lower risk than the summer for several reasons: a) since much of the seed has already been dispersed; b) typically during this time period the ground will be frozen and not susceptible to much disturbance and most of the grass and herbaceous plants are not likely to be impacted, although shrubs can be broken; c) the number of users during this time period is much lower and many areas are inaccessible with OHV's due to snow depths.

Western Prairie Fringed Orchid: Under this alternative, motorized cross-country travel would be allowed during the summer months, which coincides with the flowering period of this species; therefore, existing direct effects have the potential to continue. Indirect effects through habitat alterations also have the potential to occur, as motorized cross-country travel would be allowed for parts of the year. The conclusion of effects of this alternative is May Affect, likely to adversely affect the western prairie fringed orchid.

Sensitive Plant Species: This alternative would allow motorized cross-country travel during the summer months (6/15-8/31), which coincides with the flowering and seed production of many sensitive plant species; therefore, existing direct effects have the potential to continue. Indirect effects through habitat alterations also have the potential to occur, as motorized cross-country travel would be allowed for parts of the year. Overall effects are similar to the No Action Alternative. The implementation of this alternative may impact individuals or habitat, but would not contribute to a trend towards federal listing or loss of viability to the population or species.

Cumulative Effects

Weeds: Both BLM and FS have recognized the need to do more vegetation treatments, especially in forested condi-

tions, but also in shrublands. Often these treatments takes the form of substantially increased amounts of prescribed burning and in some areas it will involve timber harvests, especially thinnings, to improve the diversity of wildlife habitat, reduce the risk of undesirable wildfires, protect watersheds, etc. The activities that make the forests more open and temporarily remove the trees create more receptive conditions for weed invasion. Alternatives 1, 2 and 3 that reduce the risk of weed spread through OHV management, also reduce the risk of weed spread into the areas where the vegetation is temporarily disturbed by fire and/or timber harvests.

OHV use for motorized cross-country travel is only one of many ways that weeds can be spread. The elimination of motorized cross-country travel by itself would not make a large difference in weed spread. However, it could make an incremental difference. The same can be said of the weed seed free forage program for packstock use on federal lands, by itself it won't make a large difference, neither would requiring the cleaning of equipment used on timber sales, utility corridors, fish habitat improvement projects, etc. The National Off Highway Vehicle Conservation Council has promoted the use of OHV's on roads and trails, with part of the rationale based on their concern for the spread of noxious weeds. However, as all of these practices are implemented across federal lands, their cumulative effect is to substantially reduce the risk of invasive exotics spreading across the landscape.

The invasion of native plant communities by invasive weeds should be viewed as an irretrievable commitment of resources once they are beyond the initial eradication stage. After that point the effort is to try and minimize their effects on all the resources cited previously and minimize their spread to uninfested areas. It means an ongoing effort into the foreseeable future of expenditures in Integrated Pest Management (IPM) efforts. If the IPM efforts are not implemented, then short-term losses in use of habitat by wildlife, recreationists, livestock permittees, reductions in biodiversity, loss of topsoil through increased rates of erosion will occur, which often leads to increased sedimentation in streams and lakes. These same effects on short-term use can turn into long-term productivity losses for all those items just listed.

Threatened, Endangered, and Sensitive Plant Species:
Cumulatively, numerous factors have the potential to impact threatened, endangered, and sensitive (TES) species. These include management activities such as timber harvest, livestock grazing, fire suppression, and road building. Other natural events such as fire, floods, drought, and minor climatic shifts can also impact TES species. The incremental effects contributed by motorized cross-country travel would include continued direct and indirect effects as described under the No Action Alternative. Of particular concern are the indirect effects of habitat loss due to invasive weeds. Habitats that are most vulnerable to invasive weeds are dry forests at lower elevations and grasslands in valley and montane zones. These are also the same habitats that are most conducive to motorized cross-country use. Under the No Action Alternative and Alternative 4, the spread of invasive weeds due to motorized cross-country use would continue to occur. The invasion of TES plant habitat by invasive weeds could be viewed as an irretrievable commitment of resources, as these habitats would no longer be available to TES plants. Under Alternatives 1 and 2, the direct and indirect effects associated with motorized cross-country travel would be reduced or eliminated. However, habitats that are already infested with weeds would still be unavailable to TES plants and would still be considered an irretrievable commitment of resources unless very intensive eradication and restoration efforts were undertaken. Alternative 3 would be similar to the No Action Alternative on the Kootenai, Flathead, and Bitterroot National Forests. In the rest of the analysis area, Alternative 3 would be similar to Alternative 2.

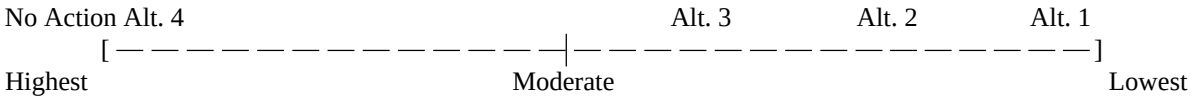
Comparison of Alternatives

Figure 3.6 shows the relative risk of each alternative for TES plants and weed invasion risk from OHV cross-country use only, use on roads and trails is not included. Roads and trails are major avenues of weed invasion but their effect is the same across all alternatives and therefore, do not change between alternatives. Site-specific analysis would address the role of weed spread associated with roads and trails.

OHV cross-country use is only one of many ways that weeds are spread. The action alternatives make an incremental difference commensurate with the proportion motorized cross-country travel contributes towards the whole picture of weed spread.

The No Action Alternative is the highest risk because it has the greatest area open (15.8 million acres) for the longest periods of time and the least number of restrictions. Alternative 4 is slightly less than the No Action Alternative since the seasonal restrictions would reduce the amount of use during hunting seasons. However, the acreage open is the same and the season of use is during seed dispersal times for the weeds. Alternative 3 is substantially less at risk because only 6.5 million acres are open and of the land that is open many acres are not available because dense forests make traversing it unrealistic. Alternatives 1 and 2 are the lowest risk because they close most areas to motorized cross-country travel. Alternative 1 is slightly better due to the exceptions in Alternative 2.

Figure 3.6
Relative Risk of Alternatives to Invasive Weed Spread and Threatened, Endangered, and Sensitive Plants



WILDLIFE

AFFECTED ENVIRONMENT

Introduction

This section provides a basis from which effects on wildlife from OHV's can adequately be addressed for a three-state area. Descriptions of broad vegetative zones as inhabited by groups of animals provide the most common level of description needed for this analysis.

Over 600 species of fish and wildlife occupy federal lands in the analysis area, either seasonally or yearlong. Species of special interest include big game, game birds, waterfowl, carnivores, predators, fur bearers, those designated as sensitive, and those listed as threatened or endangered. Threatened and endangered species are listed in Appendix E. The BLM species of special concern and FS sensitive species are also listed in Appendix E. There are 80 animal species of special concern or sensitive species in the three-state area.

The vegetative description in the vegetation section adequately describes wildlife habitat. Of particular importance to wildlife are special habitats such as riparian and sagebrush.

Rocky Mountain Region

Mountainous areas provide seasonal habitats for a large number of ungulates that migrate from high elevation in the summer and fall, to lower elevations, usually south facing slopes, in the winter and spring. Elk, mule deer, white-tailed deer, moose and bighorn sheep are common to the forests of Montana. Dense forests with steep slopes extend from the west into the more open, less steep, country of the southern forests of the Gallatin and Beaverhead-Deerlodge National Forests. The western forests meet the plains along the Rocky Mountain Front of central Montana. The Rocky Mountain Front is an extensive winter range area that serves much of the wildlife that summer in the Bob Marshall, Scapegoat, and Great Bear Wilderness Areas. Other unique species of high public interest found in the mountains include carnivores such as wolverine, pine marten, fisher, lynx, mountain lion, and the threatened grizzly bear and endangered gray wolf.

In the past, both engineered and pioneered roads followed drainage bottoms, which were the path of least resistance. These locations created the worst situations for resident wildlife since riparian areas are important habitats. Likewise, OHV use off these main roads often followed side drainages and possibly ridgelines, which were also highly utilized by wildlife. The remainder of the mountainous area is generally not conducive to off-road travel because of steepness of slope and the density of vegetation in the forests (M. Hillis, per. comm. 1999). In the forests of southwest Montana, off-road travel is relatively common in some locations due to patchy and less dense vegetation and, in some areas, more gentle terrain (M. Cherry, pers. comm. 1999).

Small mammals can be found throughout the mountains and associated habitats. Some occupy unique environments such as alpine habitats and bogs. Pocket gophers, pikas and marmots are common in alpine habitats, as is the chipmunk. Alpine zones in a sense are ecological islands within mountain ranges (Fitzgerald et al. 1994). Animals occupying these alpine zones are susceptible to extinction if severely impacted. Bogs provide fragile habitat with unique wildlife. In Montana, the northern bog lemming is classified as a state rare species dependent on bogs or peatlands (Reichel 1998, Flath 1998, MTNHP 1999), and several other small mammal species may be commonly associated with bogs (Montana Chapter of the Wildlife Society 1999).

Great Plains and North American Prairie Regions

Sagebrush habitat in this region is key to the existence of particular wildlife species. Often occurring along mountain foothill areas, sagebrush habitats often serve as winter range and can be the most important dietary item to mule deer. Grasses on sagebrush winter range areas are most important to elk and bighorn sheep, but if grasses are scarce sagebrush can become important in the diet of elk. Sagebrush habitats also occur throughout the Missouri River breaks, the broken terrain and rimrock areas in south-central Montana, and through similar terrain along the Yellowstone River. These habitats are important to elk and mule deer. Bighorn sheep populations are found in localized areas of North Dakota and central, western, and southern Montana.

Pioneered roads in these habitats have impacted wildlife. Many of these roads were started and developed for hunting purposes. According to FS and BLM personnel, off-road travel is prevalent year-round on nearby Beaverhead-Deerlodge National Forest and BLM lands (G. Mariani and J. Roscoe, pers. comm. 1999). In this area, nearly every ridge that can be traveled contains a pioneered road. Two examples of detrimental effects include enough spring travel on pioneered roads to stress elk on sagebrush-nursery areas, and travel to sagegrouse leks to observe them at their ritual dance.

Pronghorn antelope and sagegrouse are particularly dependent upon sagebrush habitat. Antelope depend on sagebrush as forage during the winter, which often exceeds 80% of their diet. Typical sagebrush habitat inhabited by antelope contains sagebrush plants less than 24 inches in height with a variety of forbs and other forage occupying the site. These sagebrush stands have less than 50% cover and other components such as water are present (Cooperrider et al. 1986).

The importance of sagebrush to sage grouse has been well documented. They prefer sagebrush with a canopy cover greater than 15% for cover and food. Sagebrush provides 80 to 100% of the sage grouse's winter diet. Nesting habitat is often located under robust sagebrush plants.

Other species typically found in sagebrush habitats include sage thrasher, sage sparrow, Brewer's sparrow, pygmy rabbit, white-tailed jack rabbit, great basin Kangaroo rat, deer mouse, Columbian ground squirrel, coyote, black-billed magpie, horned lark, burrowing owl, ferruginous hawk and other raptors. Some reptiles occur in sagebrush habitats including the common garter snake, western rattlesnake, gopher snake, and horned lizard.

Native grasslands are the undisturbed areas left after conversions into agricultural lands. Unfortunately, river bottom areas have been the first to be converted, so much of the remaining grasslands occupy uplands. The ecotone between shrublands and grasslands has the greater diversity of species and this zone most often occurs along the mountain foothill area. Ponderosa pine forests of southeastern Montana occupy a large area and contain healthy populations of white-tailed and mule deer as well as Merriam's wild turkey.

The mixed plains grasslands support a wide variety of wildlife. Many grassland animals are burrowers and others are swift runners. The pronghorn antelope is a common large mammal along with mule and white-tailed deer. Significant numbers of upland nesting waterfowl are found using potholes and reservoirs where upland cover is adequate for nest concealment and successful nesting. Nearly 15% of the continental population of ducks is produced from the Prairie Pothole Region (Montana, North Dakota, South Dakota, Minnesota and Iowa). Canada, snow, and white-fronted geese, swans, and over 20 species of ducks occur in Montana, North Dakota and South Dakota.

Sharp-tailed grouse occur throughout the plains and lower foothills east of the continental divide where native range is in good condition. They are more prevalent on upland mixed prairie than on sagebrush-saltbush areas. Sharptails nest on uplands in dense stands of residual cover but can also use brushy coulees. Woody draws and woodlands provide food and thermal cover during winter.

Of special note are prairie dog towns that are often the result of heavy grazing. These areas contain bare ground and low cover value. Although habitat appears limited with low species diversity, the exact opposite holds true. A total of 163 vertebrate species were reported on black-tailed prairie dog colonies in Montana, and five other studies (Reading et al. 1989, Koford 1958, Tyler 1968, Campbell and Clark 1981, Clark et al. 1982, Agnew 1983). Agnew and others (1986) found significantly higher densities of birds and mammals and greater avian species richness on prairie dog colonies than on adjacent prairie. The black-footed ferret, golden eagle and others prey on prairie dogs, burrowing owls and cottontails inhabit unused burrows, and mountain plovers and others benefit from the environmental alterations of prairie dogs. The one notable effect from off-road travel in the jurisdiction of the Malta Field Office of BLM is that such travel can contribute to the numbers of prairie dogs killed by shooting. During a period of time when prairie dog populations are low and in an area where the black-footed ferret has been introduced and is recovering, the influence of off-road travel is not desirable (J. Grensten, pers. comm. 1999).

Since motorized cross-country travel across grasslands is so free of physical barriers, pioneered roads and/or trails lead to the most interesting features, which are often the important wildlife habitats such as sharp-tailed grouse leks and prairie dog towns. Many of these trails have been established during hunting season.

Threatened, Endangered, and Proposed Species

The U.S. Fish and Wildlife Service provides lists of threatened and endangered species that may occupy habitats on federal lands in the three-state area that include one insect, three fish, five birds, three mammals, and three plants. In addition, there are two species proposed for listing. The fish are discussed under Aquatic Resources in this chapter. The plants are described under the Vegetation and Weeds section.

American Burying Beetle: This endangered species is listed only for South Dakota and is only known to occur in Gregory and Tripp Counties. BLM has 172 and 160 surface acres, respectively, in these two counties. Suitable habitat for the beetle is any site with significant humus or topsoil for burying carrion (USFWS 1995). This habitat is not known to occur on BLM lands within the range of the beetle.

Whooping Crane: This endangered species has not been documented on federal lands in Montana, North Dakota or South Dakota. Migrations pass over this area, but the important rituals in their life cycles are performed elsewhere.

Bald Eagle: This threatened species is a migrant in North Dakota and South Dakota but occurs year-round in Montana and has made significant gains in breeding numbers. In 1978, only 12 breeding pairs were known in Montana (Servheen 1978). Spring counts in 1998 totaled 248 nests, which exceeds recovery goals (D. Flath, pers. comm. 1999). In Montana, bald eagles use riparian and wetland habitats during breeding season and choose old, large diameter trees for nesting (Montana Bald Eagle Working Group 1994). No evidence has surfaced that indicates OHV disturbance on nest sites is a problem. At least that is the situation on the west side of the continental divide where most of the nests are located (M. Hillis, pers. comm. 1999). The bald eagle is currently proposed to be delisted.

Peregrine Falcon: Only one pair of this endangered species was known to nest in Montana by 1975. Initiation of a cooperative and very successful hacking program has resulted in 23 known nest sites by the spring of 1998 (D. Flath, pers. comm. 1999). The peregrine was recently delisted in August, 1999, becoming an example of success for the Endangered Species Act. Peregrines nest on cliffs and hunt river bottoms, marshes, lakes and other wetlands in search of small shore birds, blackbirds, doves, and smaller song birds. It is likely, given the nest sites and type of terrain chosen by peregrines, that OHV travel would not affect breeding pairs.

Piping Plover: This threatened species nests on sand and pebble beaches. In North Dakota they have also been documented on saline wetlands. Both habitats occur on BLM lands. One piping plover nest has been documented in Montana on a 16-acre parcel of BLM land in the Miles City Field Office area, which has been designated an Area of Critical Environmental Concern for the piping plover. There are no known occurrences on BLM lands in North Dakota and South Dakota, and the amount of habitat on BLM lands is limited.

Mountain Plover: This species is proposed to be listed as threatened. Mountain plovers would most likely occur on the shortgrass prairie of eastern Montana. Knowles and Knowles (1999) summarized their survey of mountain plovers from 1991-1998 for Montana east of the continental divide. Mountain plovers were found at nine distinct areas. They were closely associated with sites characterized by slopes under 5%, vegetative height under 6 cm, and greater than half the soil surface being bare ground, lichen and/or club moss. Often they are associated with prairie dog colonies.

Least Tern: Favorite nesting sites for this endangered species include bare ground (recent alluvium) on islands. One island in the Yellowstone River, adjacent to public land, contains a colony of nesting least terns. None are known to occur on BLM lands in the analysis area. During spring and fall, least terns may use stock water reservoirs.

Black-Footed Ferrets: Prairie dog colonies are key to the endangered black-footed ferret, although ferrets have been observed in ground squirrel colonies. Burrows provide shelter and the prairie dog itself is food for the ferret. Large colonies or complexes are needed for ferret survival, and this is the reason Phillips County was chosen as Montana's reintroduction area. The program was initiated in 1994 and yearly releases have occurred ever since. According to the U.S. Fish and Wildlife Service, 41 ferrets were counted there during the fall of 1998 (R. Matchette, pers. comm. 1999). In the past, these prairie dog towns in Phillips County have been important to a significant number of sport shooters. Because of a recent decline in prairie dogs, BLM is now closing these towns to shooting. This will reduce the amount of OHV travel in the area.

Gray Wolf: The recovery plan for this endangered species discussed three areas for wolf recovery including the Central Idaho Recovery Area, the Northwest Montana Recovery Area, and the Yellowstone Recovery Area (USDI 1987). The goal for delisting was to establish 10 or more packs in each of these three areas. It is very likely that goal may be reached after this year's breeding season, spring 1999. Wolves first expanded down from Canada in northwest Montana and have continued expansion ever since. Recently, successful releases in Yellowstone Park and Central Idaho advanced the process. Key components of wolf habitat include sufficient year-round big game prey base and secluded denning and rendezvous sites with minimal exposure to humans. Riparian and wetland sites are especially important for rendezvous sites, which are specific resting and gathering areas for the packs after the whelping den has been abandoned. Beaver provide an important alternate prey in these areas during ice free times (USDI 1987).

Grizzly Bear: This threatened species is essentially holding its own in two ecosystems, the Northern Continental

Divide Ecosystem of western Montana and the Yellowstone Ecosystem of southwestern Montana and portions of Wyoming and Idaho (essentially centered in Yellowstone National Park). Other ecosystems with some limited grizzly bear occupancy include the Selkirk and Cabinet-Yaak Mountains of Montana, the Selway-Bitteroot of Montana and Idaho, and the North Cascades of Washington. A recent proposal to reintroduce grizzly bears in the Selway-Bitterroot has met with serious opposition from some segments of the public.

Grizzlies are opportunistic and omnivorous and feed on animal or vegetable matter. Herbaceous plants are utilized, as are ground squirrels, carrion, garbage, ungulates, roots, fruits, berries, tubers, fungi, pine nuts and even tree cambium. Bears occasionally prey on livestock and also are attracted to bone yards and dead livestock. Many bear foods, both animal and vegetable, occur in riparian and wetland areas, with some of the berry producing shrubs occurring in the uplands. Large areas of relatively undisturbed land with food, cover, denning habitat, solitude, and space are important for effective habitat for grizzly bears (Interagency Grizzly Bear Committee 1987, Craighead and others 1982). The Grizzly Bear Recovery Plan (USDI 1993) identifies human depredation, competitive use of habitat, and livestock grazing as sources of conflict.

Canada Lynx: Proposed as threatened, data on the Canada lynx is currently being analyzed to determine whether or not this species should be listed. Lynx occur primarily in the boreal, sub-boreal, and western montane forests of North America. In Montana, the western montane forests include spruce/fir, Douglas-fir, and fir-hemlock vegetation types dominated by lodgepole pine, Engelmann spruce, subalpine fir, aspen, and whitebark pine at 1,400-2,700m. Snowshoe hares are the primary prey of lynx, although diet can be more varied in the summer than the winter. Fire mosaics contribute to snowshoe hare abundance. Off-road vehicles probably have very little influence on lynx because they occupy habitats of dense forests at high elevations surrounded by slopes too steep to accommodate vehicular travel.

Sensitive Species

For the FS, a sensitive species is one that has been designated by the Regional Forester because of concern for population viability, as evidenced by: 1) significant current or predicted downward trends in population numbers or density; and/or 2) significant current or predicted downward trends in habitat capability that would reduce an existing species distribution. For the BLM, species of special concern are defined as native species which are either low in number, limited in distribution, or have suffered significant habitat losses. Their conservation is required, however, by FS policy (FS Manual 2670), and by BLM policy (BLM Manual 6840). Currently, the FS has 34 and the BLM has 46 animal species designated as sensitive within the analysis area. These species occupy a wide range of habitats throughout the analysis area. Some of these sensitive species and habitats are vulnerable to motorized cross-country use.

Existing Impacts from Vehicles on Wildlife

Travel by vehicle is presently occurring both on and off roads on public lands as prescribed in forest plans and resource management plans. Some level of impact is occurring to wildlife wherever this travel is allowed. Factors such as habitats and species present, density of species, location of travel in relation to important habitats, time of year or even time of day, amount of vehicle travel, and a myriad of other factors could apply in determining what and how much impact is occurring.

The extensive literature review conducted by the Montana Chapter of the Wildlife Society, 1999, "Recreation in Wildlife Habitat" (Draft Report), contains an exhaustive listing of research, much of which relates to vehicular effects on wildlife. However, most of the studies that have been undertaken are of impacts from roads and do not address the question concerning impacts from motorized cross-country travel. Continued motorized cross-country travel in an area results in the creation of "pioneered" roads. The Draft Report describes effects from roads, including habitat fragmentation, from isolation of rare and unique habitats such as bogs or alpine areas, from direct effects such as collisions with animals causing death and injury as well as physical destruction of habitats, abandonment of habitat features such as nests to abandonment of home ranges, and physiological penalties from unnecessary energy expenditures because of vehicular harassment.

Smaller animals, reptiles and amphibians are most likely to be directly killed by vehicles and are especially vulnerable when crossing roadways. Motorized cross-country travel may disrupt habitat to the point that it becomes unusable by reptiles and amphibians (Busak and Bury 1974). The diversity, density and biomass of small mammals are inversely related to the level of off-road vehicle use (Bury et al. 1977). Habitat modification through vegetation and soil disturbance may also impact many small mammals. Sensitive habitats such as alpine areas, bogs, and arid areas would be most vulnerable from impacts to vegetation.

Even though many responses of small mammals to recreationists may be short-lived, both the long-term and cumulative effects of repeated disturbance may not be immediately obvious. According to Knight and Cole (1991), effects often include abandonment of disturbed areas in

favor of undisturbed sites or, in some cases, attraction to recreational activities (Phelps and Hatter 1977, Klein 1971). This may lead to behavioral alterations such as mating, feeding and predator avoidance. Disturbance can also reduce the vigor of individuals. For example, elevated heart rates, energy expended in disturbance flights, and reductions of energy input through disturbance will all increase energy expenditures or decrease energy acquisition. These may result in increased sickness, disease and potential death of individuals (Knight and Cole 1991). While these responses have been suggested, evidence is largely circumstantial (Hutchins and Geist 1987).

Some raptors such as the ferruginous hawk can be extremely sensitive to vehicular visits, especially during courtship and nest building. Trespass can result in nest abandonment. With increased recreational pressures raptor populations could decline. People can also disrupt raptor behavior at times other than breeding season. Flushing birds from foraging perches and day or night roosts can be particularly stressful during periods of prey scarcity and/or severe weather (Holmes et al. 1993, Stalmaster 1987, Stalmaster and Newman 1978, Bueler et al. 1991, Grubb et al. 1992).

Effects from habitat fragmentation are recognized with songbirds. Roads and trails add to forest fragmentation by dissecting large patches into smaller pieces and by converting forest interior habitat into edge habitat (Askins 1994, Askins et al. 1987, Reed et al. 1996, Schonewald-Cox and Buechner 1992). Fragmentation of limited, high-value habitats such as riparian areas may cause some of the most severe impacts on songbirds. Grassland-shrubland songbird species are likewise vulnerable to road and trail activities. Trails and roads will create edge habitat for predators and will reduce patch size of remaining habitat for area-sensitive species.

The impacts of OHV's within open habitats may also be greater than within forested areas, simply because much more area is accessible and because a number of larger, low-density birds such as raptors and ravens nest along prominent landmarks (cliffs) in these habitats. Species such as ravens (Hooper 1977), golden eagles and prairie falcons (Fyfe and Olendorff 1976) can easily be disturbed during the nesting season.

Deer, elk and other ungulates experience physical stress and expenditure of energy when disturbed by vehicles. The winter season is a particularly critical period for big game, since physical stress is already relatively high and vehicular disturbance during this time could have serious effects. Other seasons are also important as well. During the summer, animals must build up fat reserves to carry them through the winter. Adult males must meet energy demands of rapid horn and antler growth. Adult females must meet the energy demands of lactation and the developing neonates.

In Montana, there has been more interest in the effects of roads on elk than any other species besides the grizzly bear. Displacement from selected habitats over time is a much more serious impact to elk than the immediate response of fleeing from a disturbance. Studies have repeatedly shown that vehicle traffic on forest roads establishes a pattern of habitat use in which areas nearest the road are not fully utilized by elk (Marcum 1976, Marcum and Edge 1991, Perry and Overly 1976, Rost 1975, Rost and Bailey 1974, 1979, Thiessen 1976, Ward 1976, Ward et al. 1973, Edge and Marcum 1991, 1985, Edge et al. 1987, Lyon 1979a, 1983). With only two miles of roads open to vehicular traffic per square mile, the area impacted can easily exceed half of available elk habitat (Lyon 1983).

The forests and shrublands of southwestern and southern Montana are more conducive to motorized cross-country travel due to moderate terrain and vegetative conditions. Unfortunately, little has been documented of the relationship between elk and motorized cross-country travel. Since this travel would be more random and probably less intense than along a road, displacement may not occur except during hunting season. However, motorized cross-country travel could work to protect elk by driving them further back into tougher country, potentially lowering the success of harvest during hunting season (R. Roginske, pers. comm. 1999). In the Bitterroot National Forest, increased levels of horn hunting may stress elk in their winter/calving area in late spring (J. Ormisten, pers. comm. 1999). A similar problem has been noted on the Gallatin National Forest (M. Cherry, pers. comm. 1999), and in the Missouri breaks horn hunters have even been observed chasing antlered bull elk with OHV's in the spring with the intent of being present when the elk lost their antlers (M. Williams, pers. comm. 1999).

The combination of motorized cross-country travel and hunting has led to examples of unethical sportsmanship, especially on opening weekends. As described by Posewitz (1994), herding fleeing antelope with vehicles and taking flock shots at long ranges has disastrous results. High crippling loss and less opportunity for ethical hunters are two of the most important effects. Adequate travel planning and OHV restrictions could reduce this kind of activity from being so prevalent.

The other animal that has been intensely examined as to how they relate to roads is the grizzly bear. Agencies responsible for this threatened species' welfare have spent countless time and money on research, cumulative effects and access modeling to determine the best way to manage roads in grizzly bear country. These efforts have been

undertaken in both the Northern Continental Divide (NCD) and Yellowstone (Y) Sub-committees of the Interagency Grizzly Bear Committee; therefore, most of the occupied habitat of the grizzly contains protective road closures of one sort or another. The NCD Sub-committee has established access standards to alleviate any effect on grizzlies for either system roads or user-created roads and trails. Motorized cross-country travel has not been addressed as being the problem to bears that roads are, but possibly could if "recreational play" became intense enough in an area of important bear habitat. This would be addressed by site-specific activity planning. Another factor is that much of the grizzly bear occupied habitat in northwest Montana is dense forest with steep slopes that naturally exclude much motorized cross-country travel. An exception to this situation may be in the Gallatin Forest of the Yellowstone grizzly bear ecosystem, where vegetation is more open and slopes are gentler (M. Cherry, pers. comm. 1999).

One of the most serious impacts on wildlife from vehicles has been indirect. Vehicle traffic on and off roads has been linked with high rates of establishment and spread of noxious weeds in wildlife habitat. Competition from noxious weeds may reduce the quality and quantity of summer forage for ungulates, resulting in poorer reproductive performance over the lifetime of an animal. Experience in western Montana has shown that noxious weeds are capable of influencing ecosystems at the landscape scale, and risks of habitat impacts are high without an aggressive program of prevention and rapid response to weed establishments.

ENVIRONMENTAL CONSEQUENCES

Effects Common to All Alternatives

This proposal is programmatic in nature; therefore, the discussion of effects will be general and qualitative rather than quantitative. The following assessment does not consider, because of the programmatic nature of this evaluation and lack of site-specific information, individual species ecological or biological requirements. Individual species requirements would be addressed in site-specific project analyses. Potential site-specific effects of implementing any alternative, on any given species or habitat, would be evaluated in a second level, site-specific project analysis.

The criteria for evaluating potential effects to sensitive species are: 1) would implementation of the alternatives result in a loss of viability or distribution throughout the analysis area of the sensitive species; or 2) would implementation of the alternatives move sensitive species toward federal listing under the ESA. An assumption made here is that all regulations, policies, and direction of the FS and BLM would be followed with the implementation of any alternative; therefore, none of the alternatives, if fully implemented, would result in loss of viability of these species or lead towards federal listing.

The most obvious effects to wildlife and wildlife habitats from motorized cross-country travel have been indirect and include:

- The creation of "pioneered" roads, often up or down drainageways or ridges. These roads are now permanent fixtures on the landscape.

- Off-road travel contributes to the spread of noxious weeds that has resulted in the loss of large acreages of wildlife habitats. The classic example is the spread of spotted knapweed across the hillsides of western Montana. However, vehicular travel on roads and trails has likely been a greater contributor of weed spread than off-road travel.

- None of the alternatives restrict OHV travel on roads and trails. Impacts to wildlife from this type of vehicular activity would continue.

Threatened, Endangered, and Proposed Species: Under all alternatives there would be No Effect to the bald eagle, peregrine falcon, and Canada lynx due to a lack of known or anticipated impacts of motorized cross-country use on these species or their habitats. Under all alternatives there would be No Effect to the American burying beetle, whooping crane, and least tern as these species are not know to occur on BLM or NFS lands within the analysis area.

No Action Alternative

As documented in the Montana Chapter of the Wildlife Society Draft Report (1999), vehicles do impact wildlife. The severity of the impact may be in direct relationship to the amount of vehicle travel occurring. For example, the impact from an interstate highway through an area of sagebrush-grassland could have a particularly devastating effect on antelope and sagegrouse, whereas the impact from the amount of off-road travel occurring in the same area could be of little consequence to these same species. In other words, the level of impact from vehicular activity on wildlife should be a direct relationship of the amount of activity occurring.

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The current level of impact (as discussed in the above section: Existing Impacts from Vehicles on Wildlife) in the three-state area from motorized cross-country travel would continue with this alternative. Many of the direct and indirect impacts discussed in that section could affect the sensitive species listed in Appendix E, including direct

crushing of individual animals, habitat modification through vegetation and soil disturbance, abandonment of disturbed areas in favor of undisturbed sites, behavioral alterations affecting mating, feeding and predator avoidance, and nest abandonment. Only in areas with site-specific travel planning is motorized cross-country travel being limited.

Impacts from vehicles can be direct as a result of collision or crushing of individual animals, however, with small mammals most impacts are related to the impacts on vegetation and barriers created by trails and roads. Habitat fragmentation reduces effective habitat for particular species. Generally, the more important the habitat type and the smaller the home range of the species, the greater the effect of fragmentation. Fragmentation of habitat from OHV use would occur as a result of long-term and repeated use resulting in the creation of a road or trail system in the particular habitat. This situation has been documented at a number of localities, often the result of hunters and the hunting season. Under this alternative, fragmentation from motorized cross-country travel or from user-created roads and trails would continue.

Physiological effects on wildlife from human disturbances, including from vehicles, have been well documented. Most studies of these effects have been on ungulates such as deer and elk. The casual observer who visits a big game winter range and watches the deer and elk may observe little disturbance exhibited by the animals. But that observer is unaware of the actual physiological stress the animal is experiencing and how that contributes to the animal's cost of living. Vehicular harassment on winter range, important summer range or other special habitat features can be governed by road placement. Animals can leave the area if the harassment is too severe or, possibly, adapt to it if the harassment has become frequent, both of which have negative consequences. However, off-road travel, which is less patterned and less expected, may be more relatively disruptive. All off-road areas now open to travel would remain open in this alternative, and these impacts would continue to occur.

One of the greatest indirect impacts from vehicles in Montana, both on and off roads, has been the spread of noxious weeds in wildlife habitats. Weed establishment has reduced the quality and quantity of wildlife forage over large areas. Weeds spread by OHV's are particularly hard to control as they are spread at random over large areas, and not just along a roadway. This alternative would allow off-road travel in the future and would continue to contribute to the spread of weeds and loss of wildlife habitat.

Threatened and Endangered Wildlife Species: The conclusion of effects for threatened and endangered species for this alternative is as follows: There would be No Effect to the black-footed ferret, since shooting of prairie dogs is not allowed in key prairie dog towns. The No Action Alternative May Affect but is not likely to adversely affect the piping plover, mountain plover, gray wolf and grizzly bear. OHV's could directly affect prey habitats of the gray wolf, as well as traverse through piping plover and mountain plover habitats. This conclusion for grizzly bear is only for the open forest-moderate slope area of the Gallatin National Forest where OHV's are prevalent. On the remainder of grizzly bear occupied habitats with dense forests and steep slopes there should be No Effect.

Sensitive Wildlife Species: As stated before, existing regulations, policies, and direction of the FS and BLM would be followed with the implementation of this alternative. However, specific impacts to sensitive species and habitats could potentially occur and cannot be determined without site-specific information. In the absence of additional information, the implementation of this alternative may impact individuals or habitat, but would not contribute to a trend toward federal listing or loss of viability to the population or species.

Alternative 1

This alternative would close all traditional motorized cross-country travel areas that have existed on FS and BLM lands. Impacts from motorized cross-country travel now occurring in the three-state area (as discussed in the No Action Alternative and in the above section: Existing Impacts from Vehicles on Wildlife) should not continue if Alternative 1 is implemented and enforced. Thus, any direct impact from vehicle/animal collision would not occur. Fragmentation as a result of motorized cross-country travel should cease, including that from roads created by OHV's.

Vehicular harassment causing physiological stress of wildlife on areas that are closed to motorized cross-country travel would cease. Thus, impacts to ungulates on winter range areas and summer habitat that has been affected by motorized cross-country travel would not continue. Birds nesting in heavy motorized cross-country use areas would not be subject to any negative effects from this activity. Prairie dog colonies and all obligate species that have been reached by motorized cross-country travel would no longer be affected.

However, cumulative stress on these animal populations might be almost as great if there are enough established roads and trails into these areas. Travel planning that analyzes specific roads and trails and closes those that are unnecessary would be the final and true mitigation.

This alternative would reduce the spread of noxious weeds in off-road areas. The indirect impact of weed expansion

into important wildlife habitats has recently been one of the greatest impacts to wildlife in the three-state area.

Threatened and Endangered Wildlife Species: Since the direct and indirect effects associated with motorized cross-country travel would be reduced or eliminated, the conclusion of effects for threatened and endangered species for this alternative is as follows: There would be No Effect to the piping plover, mountain plover, black-footed ferret, gray wolf, and grizzly bear.

Sensitive Wildlife Species: As stated before, existing regulations, policies, and direction of the FS and BLM would be followed with the implementation of this alternative. Although potential impacts associated with motorized cross-country travel would be reduced or eliminated, specific impacts to sensitive species and habitats could potentially occur and cannot be determined without site-specific information. In the absence of additional information, the implementation of this alternative may impact individuals or habitat, but will not contribute to a trend toward federal listing or loss of viability to the population or species.

Alternative 2

This alternative is slightly less restrictive than Alternative 1. Thus, impacts to wildlife may be slightly greater, or possibly negligible. Travel by OHV's would be allowed by lessees and permittees, as well as by government workers as they conducted business on these lands. Exceptions for the general public would be allowed for camping, game retrieval and disabled access. Whatever amount of direct kill, habitat fragmentation, habitat abandonment, physiological effects, or indirect impact of weed spread by these exceptions as compared to complete OHV closure would summarize the difference between Alternative 2 and Alternative 1.

Threatened and Endangered Wildlife Species: Since the direct and indirect effects associated with motorized cross-country travel would be reduced or eliminated, the conclusion of effects for threatened and endangered species for this alternative is as follows: There would be No Effect to the piping plover, mountain plover, black-footed ferret, gray wolf, and grizzly bear.

Sensitive Wildlife Species: As stated before, existing regulations, policies, and direction of the FS and BLM would be followed with the implementation of this alternative. Although potential impacts associated with motorized cross-country travel would be reduced or eliminated, specific impacts to sensitive species and habitats could potentially occur and cannot be determined without site-specific information. In the absence of additional information, the implementation of this alternative may impact individuals or habitat, but would not contribute to a trend toward federal listing or loss of viability to the population or species.

Alternative 3

Effects on wildlife from this alternative are similar to the No Action Alternative for a portion of the three-state area that would remain open to motorized cross-country travel. This area would include the Flathead, Kootenai and Bitterroot National Forests.

For the remainder of the area impacts to wildlife would be similar to that discussed in Alternative 2.

Threatened and Endangered Wildlife Species: The conclusion of effects for threatened and endangered species for this alternative is as follows. There would be No Effect to the piping plover, mountain plover, black-footed ferret, and grizzly bear since motorized cross-country travel is prohibited where these species would potentially be affected. Implementation of Alternative 3 May Affect but is not likely to adversely affect the gray wolf. OHV's can travel in habitats important to the prey species of the gray wolf.

Alternative 4

This alternative would seasonally close motorized cross-country travel during the fall hunting season and during the late winter/spring period, which is a stressful time for some wildlife populations.

Much of the motorized cross-country travel that occurs is for the purpose of hunting and much of that may occur on two weekends, the opening of antelope season and the opening of big game season. Restricting vehicles to roads and trails during the fall would greatly reduce all associated impacts to wildlife for this period. Closing these areas during the winter/spring period would lessen stress on wildlife during this critical period. During these two time periods, the impact from this alternative would be similar to Alternative 2 as exceptions for leases and others are allowed.

For the other two time periods, summer and early winter, the effects on wildlife would be similar to the No Action Alternative. This open period totals five months and does not include hunting season, the period when the greatest amount of motorized cross-country travel probably occurs. Due to this factor, the overall impacts to wildlife might be considerably less than that which is currently occurring should this alternative be implemented.

Threatened and Endangered Wildlife Species: The conclusion of effects for threatened and endangered species for this alternative is as follows: There would be No Effect to the piping plover, mountain plover, black-footed ferret, gray wolf, and grizzly bear.

Sensitive Wildlife Species: As stated before, existing regulations, policies, and direction of the FS and BLM would be followed with the implementation of this alternative. Although potential impacts associated with motorized cross-country travel would be reduced or eliminated, specific impacts to sensitive species and habitats could potentially occur and cannot be determined without site-specific information. In the absence of additional information, the implementation of this alternative may impact individuals or habitat, but would not contribute to a trend toward federal listing or loss of viability to the population or species.

Cumulative Effects

Cumulative effects that are detrimental to wildlife and wildlife habitats are greatest under the existing management condition (No Action Alternative). If the present situation continues with no restriction on motorized cross-country travel on those lands without travel plans, along with increasing recreational pressures, added impact to wildlife and wildlife habitat would result. More roads would be pioneered and more noxious weed areas would spring up. There is one management action that would lessen this cumulative impact, and that is site-specific travel planning. Over time, the areas in most need of off-road travel restriction would probably be addressed through that process.

The remaining alternatives are all positive actions for wildlife. They vary slightly in the degree of restriction placed on motorized cross-country travel, and thus, the degree of protection involved for wildlife and wildlife habitat. Alternatives 1 and 2 provide the greatest positive effect, as they protect the greatest area over the longest portion of a year. Alternative 3 restricts a smaller area, and Alternative 4 is a seasonal restriction. Cumulatively, the area closed to motorized cross-country travel would be added to other federal agency and state agency lands already closed to such travel in the three-state area. This effect would continue until site-specific planning takes place, and if such planning results in continued restriction, there would be no change in the positive cumulative effect for wildlife.

AQUATICS

AFFECTED ENVIRONMENT

Introduction

This reports provides an overview of aquatic resources on the national forests/grasslands and BLM lands in Montana, North Dakota and northwestern South Dakota. The purpose of the investigation is to understand how off-highway vehicle traffic affects water quality and aquatic habitats with an emphasis on sensitive, threatened and endangered fishes.

The popularity of OHV's for recreational purposes has grown significantly in the last 20 years, yet little research has been performed to evaluate the effects of such vehicle activity on stream channel function, water quality, or aquatic habitats. Brown (1994) evaluated river-bed sedimentation caused by OHV's at river fords. Five major processes by which locally eroded sediment was added to the stream channel were identified: the creation of wheel ruts and concentration of surface runoff, the existence of tracks and exposed surfaces, the compaction and subsequent reduction in the infiltration rate of soils leading to increased surface runoff, backwash from the vehicle, and undercutting of banks by wave action. Not surprisingly, it was determined that as vehicle traffic increased so did sediment deposited in the stream. While this study did not evaluate the effects of introduced sediment on water quality or aquatic biota, numerous other studies have evaluated the effects of road-generated sediment on water quality and aquatic habitats.

Section 303(d) of the Clean Water Act requires that water bodies violating applicable state water quality standards be identified and placed on a 303(d) list. The purpose of this protocol is to provide a consistent framework to fulfill the obligation of the FS and BLM to restore water quality limited water bodies under their jurisdiction within a reasonable timeframe.

Most pollutants on FS and BLM lands originate from nonpoint sources. Nonpoint sources of pollution are described as agricultural crops, rangeland, abandoned mines, construction sites, forestry operations, or other similar land uses. The 303(d) list (also called the threatened or impaired waters list) contains the Montana Department of Environmental Quality's best scientific assessment of the pollution problems and causes for 795 streams, rivers and lakes across Montana. The cumulative erosion resulting from a dispersed, expanding, and unmaintained motorized trail system could be considered a nonpoint source of pollution. Many of the streams residing in the river basins described

below are identified on the 303(d) list. An exhaustive listing of impaired water bodies is described by the Montana Department of Environmental Quality (1998).

The types of resource effects reported by resource specialists were consistent with those reported in a 1995 General Accounting Office Report (Information on the Use and Impact of Off-Highway Vehicles). The reports documents the problems, enforcement, and corrective actions associated with eight locations of intensive OHV use on FS and BLM lands in several western states. In this report, four of the case areas described degraded riparian areas, vehicle travel along stream beds, and the eroded soils and degraded riparian vegetation associated with vehicles climbing steep stream banks. The Montana Department of Environmental Quality (1998) identified probable causes of pollution for each stream listed and categorized them as threatened or impaired (303(d)). Common causes of pollution for streams on FS or BLM lands are habitat alterations and siltation. While numerous sources often exist for such pollution, the degraded conditions attributed to OHV use in riparian areas and stream bottoms are also likely contributors of such pollution on listed streams.

Rocky Mountain Region

Clark Fork and Kootenai River Basins: Within the Clark Fork and Kootenai River basins, public lands provide diverse riparian and aquatic habitats for a variety of native fish species, including bull trout, westslope cutthroat and redband trout, northern squawfish, sculpins, dace, sucker, mountain whitefish, white sturgeon and other lesser known species. Presently, two species in these basins in Montana, the white sturgeon and bull trout, are listed as endangered and threatened respectively, under the Endangered Species Act. Also found in these waters are many introduced fish, including largemouth and smallmouth bass, yellow perch, brook trout, bluegill, northern pike, tench, and carp (USDA 1995). Several species of resident native fish, including the ling, torrent sculpin, westslope cutthroat trout and interior redband trout, are listed as "Sensitive Species" by the FS Northern Region. The westslope cutthroat trout has been petitioned for listing under the Endangered Species Act.

Over the last 120 years, native resident fish habitat has been adversely affected by human population growth and factors associated with that growth (USDA 1995). The decline of the Kootenai River white sturgeon is primarily a result of impoundments and exploitation (USDI 1999c). For salmonid species, past and continuing management practices are causing erosion and sedimentation in various forms and by varying degrees throughout the project area. Mass erosion has accelerated in many locations where instability is a common natural feature of the landscape. Reduction of tree root holding capacity, increases in subsurface water, and undercutting of unstable slopes have resulted in significant sources of downstream sedimentation and local channel damage (USDA 1995).

Local extremes in water temperature have significantly increased by a reduction of shading from bank and other vegetation, flattening of bank angles, and reduction of overall water depth in the summer months from sedimentation as well as water diversion. Temperature effects tend to be localized in the mountainous areas, but in the lower gradient and nontimbered stream reaches, temperature change can be geographically extensive (USDA 1995).

Channel condition and channel stability have been and continue to be affected, especially in areas of extensive or long-term management. Livestock grazing, road construction, logging practices, and recreational use in some areas have destabilized stream banks resulting in bank erosion, loss of cover and shading, widening and filling of channels, and accelerated lateral migration. Recently developed and implemented best management practices, forest plans, and land use plans have reduced the frequency with which new stream destabilization occurs, however, existing channel condition and stability problems are not expected to be significantly corrected if present trends continue (USDA 1995).

Quigley et al. (1996) categorized the aquatic integrity of the 16 subbasins in Montana. A basin with high aquatic integrity is defined as a basin with a mosaic of well-connected, high quality water and habitats that support a diverse assemblage of native and desired nonnative species, the full expression of potential life histories and dispersal mechanisms, and the genetic diversity necessary for long-term persistence and adaptation in a variable environment. Watersheds that are currently aquatic strongholds occur in areas of low road density. Quigley et al. (1996) found that the higher the road density, the lower the proportion of subwatersheds that support strong populations of key salmonids. Only two subbasins in Montana were identified as having high aquatic integrity: the South Fork of the Flathead River and Rock Creek. Both the hydrologic and riparian ratings recognize road densities and riparian disturbance as critical criteria for assessing integrity.

Because much of the FS and BLM land in the Clark Fork and Kootenai River basins is steep, highly dissected and heavily vegetated, few opportunities for motorized travel exist with current OHV technology. However, some problems with motorized cross-country travel exist. Increasing use of OHV's for motorized cross-country travel is resulting in erosion of alpine meadows in the Slate Creek area of the Little Blackfoot drainage (A. Harper, pers. comm. 1999). Several forests have indicated they have site-

specific locations where undesirable effects have occurred and they are addressing these areas through local travel planning.

Upper Missouri River: The Missouri River basin, which is tributary to the Mississippi River, drains much of southwestern and northern Montana east of the continental divide. The basin drains roughly 92,000 square miles, including roughly 5,000 square miles in southern Alberta and Saskatchewan, at the North Dakota state line. The Missouri River basin occupies about 60% of the State of Montana. For purposes of this assessment, the 23,292 square miles from the headwaters to the confluence with the Sun River comprise the upper Missouri River. The three headwater streams of the Missouri River emerge from their origins in Yellowstone National Park and five mountain ranges in southwestern Montana, flow through semi-arid valleys of sagebrush and grass, and converge near Three Forks. The Jefferson, Madison, and Gallatin Rivers drain a portion of the continental divide and the Madison, Spanish Peaks, Gallatin, Tobacco Root, and Gravelly Mountain Ranges. Many peaks within these ranges reach above 10,000 feet, with valleys in these drainages occurring at an average elevation of about 4,500 feet (Graham and Decker-Hess 1988). The Missouri River begins where the Jefferson, Madison, and Gallatin converge near Three Forks. During the 180-mile journey to the Sun River, the Missouri is dammed four times at Toston, Canyon Ferry, Holter, and Hauser Reservoirs.

Sixty-two stream reaches on the Gallatin, Madison, and Jefferson Rivers and their major tributaries are low- flow problem areas (Montana DNRC 1991). The majority of these stream reaches are downstream from FS lands. Low-flow problem areas have been identified on 37 stream reaches between Three Forks and the Missouri River's confluence with the Sun River. Irrigation causes most of the seasonal low-flow conditions. Irrigation use and geological conditions in Dry Creek, Confederate Gulch, and Avalanche Creek on the east side of the Missouri River and Canyon Ferry Reservoir cause the most severe low-flow conditions (Montana DNRC 1991).

The FS and BLM consider the fluvial arctic grayling and the westslope cutthroat trout as species of special concern. The arctic grayling in Montana once had a native range consisting of streams in the upper Missouri River basin above Great Falls. Presently, fluvial grayling are found only in the Big Hole River. In 1991, the U.S. Fish and Wildlife Service (FWS) was petitioned to list the fluvial arctic grayling as Endangered, under the Endangered Species Act. Currently, the Big Hole grayling are classified as category 1 candidate species, defined as "taxa for which the FWS has substantial information to support the biological appropriateness of proposing to list the species as endangered or threatened" (USDA 1997).

Westslope cutthroat trout once had a native range including both sides of the continental divide, the upper Missouri, upper and middle Columbia River, and south Saskatchewan basins. Presently, westslope cutthroat trout are found in less than 5% of their historic range in the upper Missouri River basin (Shepard et al. 1997). Factors leading to declines of westslope cutthroat trout include introductions of nonnative fishes and habitat alterations caused by land use and water use practices (Shepard et al. 1997). Montana's Department of Fish, Wildlife and Parks recently (1996) changed angling regulations for westslope cutthroat trout in streams and rivers in the upper Missouri basin to catch and release, to lessen potential population losses caused by angling. Remaining populations within the upper Missouri basin are now restricted to isolated headwater habitats. Many of these habitats have been impacted by land and water management activities and nonnative salmonids (Shepard et al. 1997).

Land use practices, including livestock grazing, timber harvest, streamside roads, and irrigation diversions, have adversely impacted stream channel stability and the associated aquatic habitats necessary for westslope cutthroat trout (USDA 1997 and Shepard et al. 1997) in the upper Missouri River basin. Many locations of erosion associated with OHV use on designated or existing trails have been identified on national forests east of the continental divide. Discussions with aquatic resource specialists suggest that motorized cross-country travel occurs throughout the region. Areas most notably mentioned were: the Whitetail-Pipestone area on the Beaverhead-Deerlodge National Forest, areas throughout the Big Belt Mountains, the Little Belt Mountains (Tenderfoot Creek), the Judith Mountains, and the Big Snowy Mountains. Effects included streamside trails that had moved into the stream itself, numerous stream crossings, and OHV riders using ephemeral channels for trails and climbing stream banks. These activities were resulting in eroding streambanks, compaction of riparian soils, and a loss of riparian vegetation. Most resource specialists thought that these effects and activities were increasing, however, these effects were highly variable and often localized to a specific stream or reach of stream.

Upper Yellowstone River: The Yellowstone River near Livingston drains approximately 3551 square miles (USGS 1997). The Yellowstone is one of the last major free-flowing rivers in the contiguous 48 states. It originates in northwestern Wyoming and flows into Yellowstone Lake in Yellowstone National Park before entering Montana at Gardiner. For the purposes of this discussion, the upper Yellowstone River is considered that part of the drainage above Big Timber, Montana. From the park boundary the river flows north through the Paradise Valley, bordered on the east by the Absaroka Mountains and on the west by the

Gallatin Range (Graham et al. 1988). Diversions to irrigate approximately 24,000 acres occur upstream from Livingston (USGS 1997). Average annual discharge at Livingston is 3,764 cubic feet/second (USGS 1997).

At the time of early European settlement of Montana, Yellowstone cutthroat trout were the only native trout within the Yellowstone River drainage. An estimated 4,260 miles of occupied habitat and as many as six lakes support cutthroat trout. At present, an estimated 428 miles of stream support 38 genetically pure Yellowstone cutthroat trout populations. Most current populations are at risk from either hybridization, demographic or stochastic influences. According to Montana fish stocking records, 31 of the 38 streams and/or watersheds which support current populations have been stocked with at least one of the following fish species: rainbow trout, brook trout, brown trout, yellowstone cutthroat trout, or other trout of unidentified speciation (May 1998).

The population viability of 22 out of the 38 populations was at risk due to past and present management activities. However, cross-country travel of OHV's on national forest lands in the upper Yellowstone River basin is minimal and the effects of motorized cross-country travel are site-specific (B. May, pers. comm. 1999). Topography and vegetation severely limit cross-country travel of OHV's on national forest lands, thus it appears that most users stay on existing trails. Most OHV crossings are associated with trails. The net quality of streams is not being degraded by this type of activity (B. May, pers. comm. 1999). It is difficult to tie infrequent trail crossings to cumulative effects. In the Yellowstone Cutthroat Trout Status report (1998), recreation was seldom identified as a land use that was compromising the viability or habitat of Yellowstone cutthroat trout.

Great Plains Region

This region includes the Great Plains east from the Rocky Mountains to the western boundary of the Red River watershed in North Dakota, or approximately 98 degrees longitude. This area is drained by two major river systems, the Missouri River, which is tributary to the Mississippi River, and the Red and Souris Rivers, which are tributaries to Hudson Bay. The Missouri River is the dominant hydrologic feature of the northern Great Plains. This region includes the Yellowstone drainage below Big Timber, Montana. Three of the four national grasslands administered by the FS Northern Region are in this region. The Little Missouri and Cedar River National Grasslands are in North Dakota, along with about 60,000 acres of BLM lands. The majority of BLM lands is located in Bowman and Dunn counties. The Grand River National Grassland is located in northwestern South Dakota, along with approximately 279,000 acres of BLM lands.

Snowpack ranges from 10 to 40 inches. There are more perennial streams in the eastern portion due to greater rainfall combined with snowmelt. Perennial streams in the western portion flow from mountains or are fed by groundwater. In some places, infiltration of precipitation to shallow groundwater is the only source of stream flow (Johnson 1988).

The aquatic resource effects associated with OHV use throughout the area appear to be minimal. Most of the region is quite arid. On the Grand River National Grassland of South Dakota, most OHV use is by hunters and permittees. No erosion resulting from motorized cross-country travel by OHV's was noted on the grassland. On BLM lands in South Dakota, motorized cross-country travel did not appear to cause erosion or compaction of riparian soils, however, localized erosion on hillslopes and ridgetops was occurring as result of OHV travel (C. Berdan, pers. comm. 1999). On the Little Missouri National Grassland, motorized cross-country travel is extensive, resulting in rilling and gullying on hillslopes and ridges (S. Thompson, pers. comm. 1999). Aquatic resource effects from this activity are localized and include erosion in valley bottoms (S. Rinehart, pers. comm. 1999).

The effects of motorized cross-country travel in Montana are more variable. The public land in this region of Montana is administered mostly by the BLM. The largest aggregation of land administered by the BLM is near the Fort Peck Dam in northeastern Montana. Because the area is quite arid and OHV use is very dispersed, few effects from motorized cross-country travel are reported (R. Neumiller, pers. comm. 1999). The high clay content of local soils make cross-country travel of OHV's during wet periods almost impossible over much of the area. The clay soils shrink and swell between periods of wet and dry. Thus, soil compaction during drier periods is often short lived (R. Neumiller, pers. comm. 1999). No documented occurrences of riparian erosion or stream channel degradation exist for the BLM land administered out the Great Falls Field Office (T. Day, pers. comm. 1999). There is relatively little motorized cross-country travel on the Beartooth Ranger District of the Custer National Forest (P. Pierson, pers. comm. 1999). While there is considerable use of OHV's in the Pryor Mountains, most travel is limited to roads and trails. Other observations from the Custer National Forest indicate that many old, unsurfaced travel routes have developed a history of OHV use and contribute sediment to streams as a result of use under wet conditions (USDA 1999b).

Within this region, the pallid sturgeon is the only fish species on the threatened and endangered species list. The pallid sturgeon was listed as endangered in 1990 by the U.S. Fish and Wildlife Service. Pallid sturgeon remains one of the rarest fish of the Missouri and Mississippi River basins

(Dryer and Sandoval 1993). The historic range of the pallid sturgeon encompassed the middle and lower Mississippi River, the Missouri River, and the lower reaches of the Platte, Kansas, and Yellowstone Rivers. Although rare, the pallid sturgeon is widely distributed in the Missouri River and in the Mississippi River downstream from the Missouri River (Dryer and Sandoval 1993). Since 1980, reports of the most frequent occurrences of pallid sturgeon within the project area are from the Missouri River between the Marias River and Ft. Peck Reservoir in Montana; between Ft. Peck Dam and Lake Sakakawea (near Williston, North Dakota); within the lower 70 miles of the Yellowstone River to downstream of Fallon, Montana; and in the headwaters of Lake Sharpe in South Dakota (Dryer and Sandoval 1993).

Both the sicklefin chub and the sturgeon chub are considered candidate species, by the FWS, for listing on the threatened and endangered species list. Historically, the sturgeon chub and sicklefin chub were widespread throughout the main stem Missouri River and its larger tributaries, and the middle Mississippi River downstream of the confluence with the Missouri River (USDI 1999b). The primary factors associated with the decline of sturgeon and sicklefin chub are the development and continued operation of water resource projects within the Missouri River basin, including dams, reservoirs, river training structures and levees for navigation and flood control, and water diversion projects (USDI 1999a). The past and continuing destruction and alteration of the big river functions and habitat once provided by the Missouri and Mississippi Rivers is believed to be the primary cause of declines in reproduction, growth, and survival of sturgeon chub, sicklefin chub, and other big-river fish such as the endangered pallid sturgeon. Because of the great size of the rivers that these chubs inhabit, and the apparent minimal effects of OHV cross-country travel reported across the region, it is unlikely that cross-country travel of OHV's, at their current level, would further compromise the status of the sturgeon chub and sickelfin chub. Paddlefish and the blue sucker (BLM species of special concern) have also been largely affected by impoundments. Other species of special concern are the northern redbelly dace, pearl dace and the shortnose gar.

North American Prairie Region

The region begins at the western boundary of the Red River watershed, or approximately 98 degrees longitude, and continues to the eastern border of North Dakota and South Dakota. Within this region there are no fish species listed as threatened or endangered by the U.S. Fish and Wildlife Service. The Sheyenne National Grassland is the only national forest land in the prairie division and is located in the southeastern corner of North Dakota. Much of the grassland is ponds, wetlands, and seasonal wetlands (B. Stotts, pers. comm. 1999). The north end of the grassland is flat and borders a short segment of the Sheyenne River. OHV travel on the Sheyenne National Grassland is concentrated on the hummocks and dunes of the central and southern part of the grassland. Although erosion resulting from this type of use is common, it is neither near nor connected to any riverine environments. Because the north end of the grassland is relatively flat, it does not offer the same attraction as the swales and dunes in the central and southern part of the grassland. Little motorized cross-country travel of OHV's occurs on land near the Sheyenne River (B. Stotts, pers. comm. 1999).

Species Descriptions and Habitat Requirements

Descriptions are provided for listed species and only key sensitive species or species of special concern because of the broad programmatic nature of this document. Key sensitive species are those in which motorized cross-country travel has potential for impact.

White sturgeon: This endangered species historically occurred on the Pacific coast from the Aleutian Islands to central California. It occurs in the Columbia River system and its major tributary, the Kootenai River. They are generally long-lived, with females living from 34 to 70 years. Females normally require a longer period to mature than males, with females spawning between 15 to 25 years of age. White sturgeon are broadcast spawners in large rivers during peak flows from April through July. The Kootenai River population is one of 18 landlocked populations known to occur in western North America. White sturgeon is mainly a bottom feeder and feeds on mostly fishes and a wide variety of invertebrates (Scott and Crossman 1973).

Pallid sturgeon: This endangered species is well adapted for life at the bottom of swift, large, turbid and free flowing rivers. Pallid sturgeon evolved in the diverse environments of the Missouri and Mississippi Rivers. Floodplains, backwaters, chutes, sloughs, islands, sandbars, and main channel waters formed the large-river ecosystem that provided macrohabitat requirements for pallid sturgeon and other native large-river fish (Dryer and Sandoval 1993). These habitats within the project area have been drastically altered. "On the mainstem of the Missouri River, approximately 36% of riverine habitat within the pallid sturgeon's range was eliminated by construction of six massive earthen dams between 1926 and 1952 and another 40% has been channelized. The remaining 24% has been altered due to changes in water flows caused by dam operations" (Dryer and Sandoval 1993).

The range of water depths where pallid sturgeon were frequently found in South Dakota is 7-20 feet. In Montana, pallid sturgeon were captured from depths that ranged from 3.9-12.1 feet, but they were captured in deeper waters during the winter (Dryer and Sandoval 1993). During late summer in North Dakota, pallid sturgeon were captured at depth that ranged from 6.9-24.9 feet (Dryer and Sandoval 1993). Because of the great size of the rivers that pallid sturgeons inhabit, the typical water depths in which they have been found, and the apparent minimal effects of OHV cross-country travel reported across the region, it is unlikely that motorized cross-country travel, at the current levels, would further compromise the status of the pallid sturgeon.

Bull trout: This is a threatened species within the Columbia River basin. The following discussion of bull trout habitat requirements is taken from Montana Bull Trout Scientific Group (1998). The majority of migratory bull trout spawning in Montana occurs in a small percentage of the total stream habitat available. Spawning takes place between late August and early November, principally in third and fourth order streams. Spawning adults use low gradient areas (less than 2%) of gravel/cobble substrate with water depths between 0.1 and 0.6 m and velocities from 0.1 to 0.6 m/s. Proximity of cover for adult fish before and during spawning is an important habitat component. Spawning tends to be concentrated in reaches influenced by groundwater where temperature and flow conditions may be more stable. The relationship between groundwater exchange and migratory bull trout spawning requires more investigation. Spawning habitat requirements of resident bull trout are poorly documented.

Successful incubation of bull trout embryos requires water temperatures below 8 degrees C, less than 35-40% of sediments smaller than 6.35 mm in diameter, and high gravel permeability. Eggs are deposited as deep as 25.0 cm below the streambed surface and the incubation period varies depending on water temperature. Spawning adults alter streambed characteristics during redd construction to improve survival of embryos, but conditions in redds often degrade during the incubation period. Mortality of eggs or fry can be caused by scouring during high flows, freezing during low flows, superimposition of redds, or deposition of fine sediments or organic materials. A significant inverse relationship exists between the percentage of fine sediment in the incubation environment and bull trout survival to emergence. Entombment appeared to be the largest mortality factor in incubation studies in the Flathead drainage. Groundwater influence plays a large role in embryo development and survival by mitigating mortality factors.

Rearing habitat requirements for juvenile bull trout include cold summer water temperatures (15 degrees C) provided by sufficient surface and groundwater flows. Warmer temperatures are associated with lower bull trout densities and can increase the risk of invasion by other species that could displace, compete with, or prey on juvenile bull trout. Juvenile bull trout are generally benthic foragers, rarely stray from cover, and they prefer complex forms of cover. High sediment levels and embeddedness can result in decreased rearing densities. Unembedded cobble/rubble substrate is preferred for cover and feeding and also provides invertebrate production. Highly variable streamflow, reduction in large woody debris, bedload movement, and other forms of channel instability can limit the distribution and abundance of juvenile bull trout. Habitat characteristics that are important for juvenile bull trout of migratory populations are also important for stream resident subadults and adults. However, stream resident adults are more strongly associated with deep pool habitats than are migratory juveniles.

Both migratory and stream-resident bull trout move in response to developmental and seasonal habitat requirements. Migratory individuals can move great distances (up to 250 km) among lakes, rivers, and tributary streams in response to spawning, rearing, and adult habitat needs. Stream-resident bull trout migrate within tributary stream networks for spawning purposes, as well as in response to changes in seasonal habitat requirements and conditions. Open migratory corridors, both within and among tributary streams, larger rivers, and lake systems are critical for maintaining bull trout populations.

Interior redband trout: This sensitive species exhibits a wide variety of life history strategies. Anadromous stocks of redband (steelhead) trout historically migrated up to 1,600 kilometers to the middle and upper Columbia River drainage (Behnke 1992). Many of these stocks are now extinct due to dams impeding upstream migration. The gerrard strain of rainbow trout (kamloops) of Kootenay Lake, British Columbia, Canada, represents an adfluvial form, which attains a large body size due to their piscivorous diet of kokanee salmon. Kamloops redband trout rear in Kootenay Lake and reportedly spawn in Kootenai River tributaries in Montana (Huston 1998). Fluvial stocks occupy larger rivers and spawn in smaller tributaries. Resident populations inhabit smaller tributaries and headwater areas for their entire lives.

Behnke (1992) differentiates the redband-rainbow-golden-steelhead trout complex into six "subspecies," one of which is the Columbia/Frazier redband, including the Kootenai River redband.

The interior redband range includes this area of the Kootenai River (and tributaries including the entire Yaak River drainage) in Montana. The Kootenai River redband trout in Montana represent the furthest inland penetration of redband trout in the Columbia River basin. Historically, the interior redband trout occupied much of the Kootenai River system below Kootenai Falls, including the Yaak River. Now, only a few remnant populations exist due to habitat degradation and planting of nonnative stocks of coastal rainbow trout. Genetic introgression with these nonnative stocks is thought to be the principle cause of reductions in distribution and abundance throughout its historic range (Behnke 1992). Much of the controversy surrounding the redband is over the genetic integrity of remaining populations, and the imminent danger of hybridization with nonnative, hatchery propagated fish.

Westslope cutthroat trout and Yellowstone cutthroat trout: Westslope and Yellowstone cutthroat trout, both sensitive species, have two distinctive life forms: migratory and resident. Migratory life forms are either fish that spend most of their adult lives in lakes (adfluvial) or rivers (fluvial) and migrate into tributaries to spawn. Resident cutthroat trout are fish that generally spend their entire lives in the tributaries of which they were reared, and are usually much smaller in size than their migratory counterparts. Spawning takes place from March to early July with water temperature near 10% Celsius (McIntyre and Rieman 1995). Westslope cutthroat trout begin to sexually mature at age three and usually are spawning by ages four and five (McIntyre and Rieman 1995). Spawning adults can be as small as 15 cm, with females containing as few as 100 eggs (Meehan and Bjornn 1991). Fry will emerge from spawning gravels from June to mid-July and will usually stay within their natal streams from one to four years, if they are the migratory form.

Montana arctic grayling: The Montana arctic grayling is a sensitive species. Fluvial grayling in the Big Hole River undergo extensive upstream and downstream migrations (Kaya 1992). While migratory patterns differ among streams, a common pattern is movement upstream to spawning and summering areas and downstream to wintering areas with large volumes and deep pools (Reynolds 1989, Shepard and Oswald 1989). Big Hole River grayling have been observed to migrate as far 50 miles. It is not known whether grayling in other Montana streams are also migratory (Kaya 1992).

Grayling in Montana occupy habitats with low gradients of up to 20 feet per mile, water velocities of 1 to 2 ft/s, water depths of 1 to 3 ft, spawning substrate of coarse sand to fine gravel, and with beds of macrophyte vegetation being common (Vincent 1962). Liknes (1981) found the greatest number of grayling on the Big Hole River in a section near Wisdom that had a gradient of 0.3% and a mean velocity of 0.7 ft/s.

Recent observations have indicated that an important component of fluvial grayling habitat is the presence of pools. Pools provide deep, low-velocity habitat preferred by grayling (Kaya 1992). Electrofishing surveys have indicated that fluvial grayling in Montana and Alaska spend most time in pools rather that riffles (Hubert et al. 1985, Reynolds 1989, Shepard and Oswald 1989). Pools in the Big Hole river are defined by Liknes (1981) as areas with maximum depths greater than 0.5 m, slow water velocities, smooth water velocities, and smooth surfaces.

ENVIRONMENTAL CONSEQUENCES

Introduction

The impacts of roads and trails on aquatic resources have been documented in the affected environment and are considered part of the existing condition. In all alternatives, site-specific analyses would be completed after this decision to determine site-specific mitigation needed to maintain or improve aquatic conditions where necessary. The intensity of motorized cross-country use on FS and BLM lands within the analysis area is expected to increase. This analysis evaluates the relative probability, associated with each alternative, of further degradation of riparian areas and aquatic habitats, and the vulnerability of sensitive salmonids to increased angling pressure and poaching on FS and BLM lands within the analysis area.

Effects Common To All Alternatives

None of the alternatives restrict use where OHV user-created roads and trails have been established in riparian areas, areas of unusual erosivity, or areas of critical aquatic habitats. Because OHV use is not evenly distributed across FS and BLM lands in the analysis area, the effects associated with this use are concentrated in intensively used areas. The amount of sediment routed to streams and rivers in the analysis area is highly variable and dependent upon numerous factors that cannot be easily quantified at this level.

Sensitive Fish: This proposal is programmatic in nature; therefore, the discussion of effects will be general and qualitative rather than quantitative. The following assessment does not consider, because of the programmatic nature of this evaluation and lack of site-specific information, individual species ecological or biological requirements. Individual species requirements would be addressed in site-specific project analyses. Potential site-specific effects of implementing any alternative, on any

given species or habitat, will be evaluated in a second level, site-specific project analysis.

The criteria for evaluating potential effects to sensitive species are: 1) would implementation of the alternatives result in a loss of viability or distribution throughout the analysis area of the sensitive species; or 2) would implementation of the alternatives move sensitive species toward federal listing under the ESA? An assumption made here is that all regulations, policies, and direction of the FS and BLM would be followed with the implementation of any alternative; therefore, none of the alternatives, if fully implemented, would result in loss of viability of these species or move toward federal listing.

No Action Alternative

The No Action Alternative is the least restrictive for motorized cross-country use. Motorized cross-country use of OHV's in areas of intensive use would likely continue to increase, as would the negative effects of such use in riparian areas. OHV user-created roads would incrementally increase road densities. Due to topography and vegetation, this process would likely occur more rapidly in the arid and less steep terrain east of the continental divide. Many of the effects associated with water and water resources are often localized in arid geographic settings where little fish habitat is available, such as the many isolated and fragmented lands administered by the BLM. Further localized degradation of fish habitat by motorized cross-country travel may occur. This would be particularly true for lands around the Dillon Field Office of the BLM, the Big Belt Mountains, Little Belt Mountains, the Snowies, areas of eastern Montana, the Little Missouri National Grassland, and areas of the Little Blackfoot drainage. West of the divide, widespread motorized cross-country use is less likely due to topography and vegetation. User-created roads and trails generally fail to meet the riparian and road management objectives outlined in the Inland Native Fish Strategy (USDA 1995). Implementation of this alternative would still allow wheeled motorized access to riparian areas and stream channels. Erosion and riparian degradation would likely continue to occur with the No Action Alternative. The effects would likely be more pronounced east of the continental divide.

The Montana Department of Environmental Quality (1998) identified probable causes of pollution for each stream listed as threatened or impaired (303(d)). Common causes of pollution for streams on FS or BLM lands are habitat alterations and siltation. While numerous sources often exist for such pollution, the degraded conditions attributed to OHV use in riparian areas and stream bottoms are also likely contributors of such pollution on listed streams. Because sediment and aquatic habitat alterations associated with OHV traffic would likely continue to increase, it is probable that water quality on some of the 303 (d) streams would, in some cases, further deteriorate. These effects would likely be most pronounced east of the continental divide.

It is conceivable that isolated populations of westslope cutthroat trout, bull trout, redband trout, torrent sculpin, and Yellowstone cutthroat trout could become more vulnerable to angling and poaching as more people utilize cross-country motorized travel to access streams that were formerly accessible only by nonmotorized travel. It is also conceivable that as the number of trail-stream crossings increase, salmonid redds could be at greater risk from disturbance at stream fords. This scenario is more likely as OHV technology continues to improve, producing machines more capable of accessing difficult terrain. The probability of this occurring is greatest with the No Action Alternative. Salmonid habitat and habitat for torrent sculpin may be compromised in the future as technology improves on the west side of the divide.

The primary factors associated with the decline of sturgeon and sicklefin chubb are the development of water resource projects within the Missouri River basin during the 1950's and 1960's, the continued maintenance and operation of these projects as well as the construction and operation of main stem and tributary dams and reservoirs, construction of river training structures and levees for navigation and flood control, respectively, and water diversion projects have contributed to the past and present destruction and modification of sturgeon chub and sicklefin chub habitat (USDI 1999b). The past and continuing destruction and alteration of the big river functions and habitat once provided by the Missouri and Mississippi Rivers is believed to be the primary cause of declines in reproduction, growth, and survival of sturgeon chub, sicklefin chub, and other big-river fish such as the endangered pallid sturgeon. The decline of the Kootenai River white sturgeon is primarily a result of impoundments and exploitation (USDI 1999c).

Because of the great size of the rivers that these chubs and sturgeons inhabit, and the apparent minimal effects of OHV cross-country travel reported across the region, it is unlikely that cross-country travel of OHV's, at their current level, would further compromise the status of the white sturgeon, pallid sturgeon, sturgeon chub and sickelfin chub.

The conclusion of effects for listed and sensitive species are as follows:

Bull trout	May affect, not likely to adversely affect
Pallid sturgeon	No effect
White sturgeon	No effect

Alternatives 1 and 2

Effects of Alternatives 1 and 2 are similar with respect to streams and riparian habitats. Both alternatives would prohibit motorized cross-country travel yearlong. Motorized traffic would be limited to roads and trails. Either alternative would provide the greatest reduction in stream bank erosion, compaction of riparian soils, and loss of riparian vegetation. Habitat alterations and sediment generated by OHV use are not expected to spread to new areas. These alternatives provide a greater reduction in sediment and habitat alterations as sources of impairment to 303 (d) streams. By reducing motorized cross-country access to remote and isolated salmonid populations, Alternatives 1 and 2 would reduce the risk in losses of sensitive fishes. This risk reduction would be most pronounced east of the continental divide for westslope cutthroat trout and Yellowstone cutthroat trout. Effects as a result of the exceptions under Alternative 2 are not likely to affect streams and riparian habitats, nor increase the vulnerability of isolated fish populations to further losses.

The conclusion of effects for listed and sensitive species are as follows:

Bull trout	No effect
Pallid sturgeon	No effect
White sturgeon	No effect

Alternative 3

Effects under this alternative would be similar to the effects described under Alternative 2 in areas where motorized cross-country travel is closed yearlong. No change would occur in motorized cross-country travel on the Kootenai, Flathead and Bitterroot National Forests. East of the continental divide, effects would be the same as those discussed for Alternative 2. Topography and vegetation limit widespread cross-country use of OHV's in the open areas on the Kootenai, Flathead and Bitterroot National Forests. Widespread degradation of streams and riparian habitats is unlikely as a result of motorized cross-country traffic but may have localized impacts. Unless addressed in local travel planning, specific areas of erosion, such as those in the Little Blackfoot drainage, would likely continue to be aggravated by motorized cross-country travel. Because sediment and aquatic habitat alterations associated with OHV traffic would likely continue to increase, water quality on some of the 303 (d) streams may further deteriorate.

Effects to westslope and yellowstone cutthroat trout would be similar to those in Alternatives 1 and 2 because access would be limited to nonmotorized travel in many areas where these species occur. Isolated populations of westslope cutthroat trout, bull trout, and redband trout west of the continental divide could become more vulnerable to angling pressure and poaching as more people utilize motorized cross-country travel to access isolated streams. Given the topography and vegetation over most of western Montana, this risk is relatively small over most of the region.

The conclusion of effects for listed and sensitive species are as follows:

Bull trout	May affect, not likely to adversely affect
Pallid sturgeon	No effect
White sturgeon	No effect

Alternative 4

Alternative 4 would change travel direction across the entire analysis area. All open areas would be changed to a seasonal restricted/limited designation, and all seasonally restricted/limited areas would be changed to a new seasonal designation. The new seasonal designation would allow motorized cross-country travel between June 15 and August 31, and between December 2 and February 15. The same exceptions for off-road OHV travel associated with Alternatives 2 and 3 would apply to Alternative 4 outside of the specified dates.

Because the topography and vegetation make widespread motorized cross-country use west of the continental divide unlikely with current technology, the effects of Alternative 4 would not differ substantially from those associated with the No-Action Alternative or Alternative 3. Compared with the No Action Alternative, Alternative 4 would reduce the number of days that motorized cross-country travel could occur east of the continental divide. Motorized cross-country travel under Alternative 4 may result in some stream bank erosion, compaction of riparian soils, and loss of riparian vegetation in Montana, North Dakota and South Dakota. Water quality on some of the 303 (d) streams may further deteriorate because sediment and aquatic habitat alterations associated with OHV traffic would likely continue. Motorized cross-country travel may result in a greater risk for angling pressure and poaching of isolated populations of westslope and Yellowstone cutthroat in Montana. Overall, the effects of this alternative would be less than those associated with the No Action Alternative because there are fewer days during which this activity could occur. The number of potential stream fords could also be reduced because motorized cross-country travel would be restricted during the fall months. This seasonal restriction could also reduce the risk of OHV's driving over the redds of fall spawning fish such as the bull trout. East of the continental divide, the effects of this alternative would likely fall between those identified for Alternatives

1 through 3 and the No Action Alternative. The effects on white sturgeon, pallid sturgeon, sicklefin chub and sturgeon chub are the same as the No Action Alternative.

The conclusion of effects for listed and sensitive species are as follows:

Bull trout	May affect, not likely to adversely affect
Pallid sturgeon	No effect
White sturgeon	No effect

Cumulative Effects

The greatest cumulative effects exist in areas where existing road densities are contributing to the degradation of aquatic habitat and watershed resources. These impacts occur mostly in the Rocky Mountain region of the analysis area and are considered the baseline conditions. If motorized cross-country travel continues and use increases as projected, it would continue to cumulatively impact the aquatic and watershed resources. User-created roads and trails can be more impactive than designed roads and trails, since segments are created and unmitigated in sensitive areas like riparian areas or on sensitive and erodable soils. The prohibition of motorized cross-country travel would maintain conditions in their current condition in the short term until site-specific travel planning is completed. Alternatives 1 and 2 would provide the best opportunities to restore aquatic habitat and watershed resources in the long term, because areas would be prioritized for site-specific travel planning and restoration would be planned.

Comparison of Alternatives

The No Action Alternative would provide no risk reduction for further degradation of aquatic resources. This is the least desirable alternative with respect to water quality and fisheries. Alternatives 1 and 2 would provide the greatest reduction in risk for further degradation of aquatic resources by cross-country OHV use across the entire analysis area. Alternatives 1 and 2 are the most desirable with respect to aquatic resources. Alternative 3 would provide the same benefits as Alternatives 1 and 2 east of the continental divide. Alternative 3 is identical to the No Action Alternative with respect to aquatic resource effects to lands west of the continental divide. The effects associated with Alternative 4 would likely fall between those identified for the No Action Alternative and Alternatives 1 and 2.

SOILS

AFFECTED ENVIRONMENT

Soils are the fundamental natural resource on the landscape. Each soil is a three-dimensional body with its own unique physical and chemical properties. Soils result from the interaction of climate and living organisms (plants and animals) acting on geologic material through time, under conditions modified by local relief and topography (Jenny 1930). Soils vary with slope, depth, texture, color, structure, organic matter, rock content, and pH, as well as the nutrient status and capacity to hold water to support plant and animal life and land use. These same soil properties also affect land uses such as roads, trails, and recreation.

Soils, as natural bodies in the out-of-doors, have many properties that fluctuate with the seasons. Biologic activity is slowed or stopped if the soil becomes too cold, too hot, too moist or too dry. Flushes of organic matter come when leaves fall or grasses die. Soil is not a static resource as pH, soluble salts, amount of organic matter, carbon-nitrogen ratio, number of microorganisms, soil fauna, temperature and moisture all change with seasons.

The analysis area has over 1,000 different soil types in 6 of the 12 soil orders. These soils vary dramatically, often over very short distances, and respond differently to use and management. These soils are used for rangeland, forestland, agricultural production, watersheds and, in this instance, recreation.

Most of the soil data needed for site analysis, interpretation and assessment as a result of this EIS/plan amendment is available from the Natural Resource Conservation Service (NRCS) and the BLM. Soil surveys are available on a county basis, commonly at a scale of 1:24,000. Soil information is necessary to evaluate current or potential OHV impacts.

ENVIRONMENTAL CONSEQUENCES

Effects Common to All Alternatives

Impacts to soils would vary according to soil type, topsoil properties, season of use, vegetation, and micro-climatic conditions. Soil compaction increases as tire width and vegetative cover decreases and vehicle weight increases. Soil compaction occurs most when soils are moist and least when they are wet or dry. Wind erosion will increase as protective vegetative cover is reduced below 50%.

Water erosion in the form of sheet and/or rill erosion will be most common where poorly designed and or maintained

roads and trails are allowed to be used during periods of high soil moisture. Sheet and/or rill erosion, as well as soil compaction, can quickly occur on sensitive soils with concentrated cross-country travel. This is common when pioneered roads and trails on sensitive soils lose protective vegetation and become exposed to the forces of erosion.

Pioneered roads can result in loss of protective vegetation and become exposed to the forces of erosion, Helena National Forest. Photo courtesy of Montana Wilderness Association

Sheet and rill erosion would be greatest on erosive soils such as those forming from acid shales, clay shales or sandstone. Shallow soils on steep southern and/or western aspects are also sensitive to erosion. Soils least susceptible to erosion are forested and heavily vegetated grassland soils. Soils on glacial till landscapes with nearly level slopes protected by dense sod forming vegetation would have little, if any, soil compaction or erosion from wind or water.

The surface horizon or topsoil is the lifeblood of a soil. It has the most humus, nutrients, seed source, structure and microorganisms needed by a productive plant community to stabilize the site. Loss of topsoil by accelerated erosion, or compaction, makes even the best soil more difficult to stabilize or rehabilitate. Plant roots improve soil structure, increase water infiltration, and help anchor the soil and hold it in place. A diverse vegetative cover offers the best protection of the soil surface against accelerated water erosion.

No Action Alternative

This alternative, if OHV numbers and use increase as in the past, has the greatest potential impact to the soil resource. Areas currently open would allow for increased use of roads and trails as well as dispersed use of vehicles. This dispersed use could cause a small increase in soil erosion on roads and trails. Any increase in motorized cross-country travel, especially in a concentrated manner, has the potential to damage sensitive upland and riparian soils.

Alternative 1

In this alternative accelerated erosion would be limited to roads and trails. Impacts to the soil resource as a whole would be minimal as well as widely dispersed.

Alternative 2

Direct and indirect effects to soils and vegetation would be very similar to Alternative 1. Allowing for camping and limited travel would slightly increase impacts to the soil resource. The impacts to the soil resource are much less than 1% of the watershed or land resource area.

Alternative 3

In this alternative any increases in soil erosion would mostly be from increased use and/or decreased maintenance of roads and trails. OHV travel impacts from administrative, big game retrieval or permitted use are limited and would not occur often enough in the same route to remove sufficient vegetation to accelerate soil erosion. Any impacts to soils from these changes would be minimal and are estimated to occur on much less than 1% of a watershed or land resource area. Overall, accelerated soil erosion from motorized cross-country travel would be reduced under this alternative except if motorized cross-country travel were to occur in a concentrated manner.

Alternative 4

The change in time periods available for OHV use would reduce soil erosion by reducing and shifting cross-country OHV use to periods when soils are likely to be dry or frozen.

Cumulative Effects

OHV impacts to soils would vary by the soil types, climate, type and amount of vehicle use. Direct short-term OHV impacts to the soil during moist or wet periods would alter soil structure and porosity. This would affect permeability, infiltration rates, soil-air and soil-water relationships and bulk density. Long-term impacts would reduce the organic matter content and reduce nutrient cycling in most high-use areas. In the long term, while small areas of concentrated use would have significant impacts, overall there would be no significant loss of soil due to the very small amount of landscape impacted by OHV's.

AIR QUALITY

AFFECTED ENVIRONMENT

Air quality in the analysis area is excellent and due to remoteness, low population/vehicle levels and a general lack of industry, air quality is likely to remain high. Generally, ambient pollutant levels are well below measurable limits except at or near populated areas. Federal lands in Montana, North Dakota and South Dakota within the analysis area are designated as having Class II air quality (good). Class I air quality areas in the EIS/plan amendment area are limited to designated Wilderness Areas, Wilderness Study Areas, Indian Reservations, National Parks and two National Wildlife refuges. Several populated areas such as Billings, Bozeman, Missoula, and Kalispell are designated as nonattainment Class II areas. No areas are designated Class III.

ENVIRONMENTAL CONSEQUENCES

Effects Common to All Alternatives

OHV recreational use normally occurs during June to November in the analysis area. This time period is usually when climate, soils, and vegetation are normally at their driest. Fugitive dust levels would be temporarily and slightly increased by normal OHV travel in most of the analysis area during June to November. Fugitive dust levels would be lowest or not occur at all during November 15 to June 15. During this time most soil surface horizons are frozen, covered with snow or moist (Caprio and Nielsen 1992).

Areas most susceptible to slight, temporary increases in fugitive dust have soils with high levels of silt and/or carbonates in their surface horizons. These soil areas dominate east-central Montana. Areas least susceptible to increases in fugitive dust are those having soils with high levels of sand or clay in their surface horizons. These soil areas are located in granitic areas of western Montana or the sedimentary clay shale areas of eastern Montana. Maps of these areas, for more site-specific analysis, can be made from existing soil surveys.

Motorized vehicle emissions cause a very small short-term impact to localized air quality. The amount and type of emissions will vary by the number of motors, type(s) of motor, motor size, and its burning efficiency. Motor emissions, like dust, are normally quickly dispersed by thermal drafts and winds. Local OHV emission pollutant levels can be concentrated, usually during winter months, in localized areas that have frequent thermal inversions.

No Action Alternative

This alternative has the greatest potential to influence and degrade air quality in the immediate area. The current amount of OHV travel on available FS and BLM public roads and trails is unknown. Any actual increases in OHV travel on existing or new additional roads and trails would have a corresponding increase in motor emissions and fugitive dust in the immediate area.

Alternatives 1 and 2

These alternatives prohibit cross-country travel. In this scenario only a substantial and constant increase in OHV vehicle traffic on roads and trails would cause a measurable effect outside of the immediate area. Any increase in air pollutant levels are expected to correspond to those experienced on nearby unsurfaced federal, county and rural subdivision roads. OHV impacts from administrative travel, big game retrieval, or permitted use are very minor and would not occur often enough in the same place to remove sufficient vegetation to expose soil surfaces as a source of fugitive dust.

Alternative 3

This alternative has the same effect as Alternative 2 for those areas where OHV's are restricted. In the other areas, this alternative has the same effect as the No Action Alternative.

Alternative 4

This alternative offers no real differences from the No Action Alternative. The time period for open travel is reduced with a reduction in potential fugitive dust and emissions.

Cumulative Effects

OHV impacts to air would vary by area, time of year, and amount of use. Most short-term impacts would be in areas having graveled county or public land access roads. Increases in fugitive dust and gaseous pollutants would be insignificant, except in the immediate vicinity of concentrated use. In the long term, there would be no significant degradation of air quality due to the very small amount of impact from OHV's.

MINERALS

AFFECTED ENVIRONMENT

Energy mineral resources in the analysis area include oil and gas, geothermal (hot water/steam), oil shale, and coal. Nonenergy mineral resources (locatable) include precious and base metals such as gold, silver, copper, lead, zinc, and gemstones such as sapphires. Other mineral commodities which may be locatable include uncommon varieties of bentonite, building stone, limestone and gypsum. Saleable mineral materials include sand, gravel, landscaping rock, and building stone.

ENVIRONMENTAL CONSEQUENCES

Effects Common to All Alternatives

Overall, OHV designations would not limit vehicular access for mineral exploration and/or development conducted according to the terms of an approved permit, notice, plan, lease, contract, or other authorization. Mineral interests are entitled to reasonable access and use of the surface under the appropriate mineral development regulations unless specifically limited by the terms of their lease, permit or plan.

Geophysical operators are required to file and receive approval for a Notice of Intent to Conduct Oil and Gas Exploration Operations with the BLM or a Prospecting Permit with the FS prior to commencing operations on public land and National Forest System lands. The operator must comply with the terms and conditions of the notice or stipulations in the permit, including any specific travel restrictions.

Surveying and staking of drilling operations may be done without advance approval from the authorized officer (Onshore Oil and Gas Order No. 1). Lessees and operators are strongly encourage to notify the appropriate surface management agency prior to entry upon the lands for the purposes of surveying and staking. Early notification allows the surface management agency to apprise the lessees and operators of any existing conditions, including vehicle access restrictions.

On BLM land, no notification or approval by the authorized officer is required for casual use operations for locatable minerals. However, any person operating a motorized vehicle on those areas designated as limited or restricted must conform to all terms and conditions of the applicable designation orders. Use of motorized vehicles cross-country for casual use in areas limited or restricted would require permission by the authorized officer.

On National Forests, no notification or approval by the authorized officer is required for locatable mineral operations which will be limited to the use of vehicles on existing public roads or roads used and maintained for National Forest purposes and that are open to the public. However, any operator proposing to use a motorized vehicle in National Forest areas designated as limited or restricted must file a notice of intent or plan of operations and receive approval from the authorized officer prior to proceeding.

Completed notices and/or approved plans of operation are required before ground disturbing activities for locatable minerals can occur. Prospecting permits, leases, or contracts must be submitted and approved before ground disturbing exploration for or development of hardrock leasable minerals or saleable minerals. Applications for Permit to Drill and, possibly, special use permits must be submitted and approved before oil and gas drilling operations can commence.

Notices, plans of operation, permits, etc. properly filed and approved, would constitute authorization for cross-country travel as specified in the notice, permit or approved plan. The operator must comply with the terms and conditions of their authorization including any specific travel restrictions.

No Action Alternative

Under the No Action Alternative, there would be no impact to mineral exploration or development.

Alternative 1

In those areas available for mineral exploration and development, use of motorized vehicles by operators, contractors, surveyors and others for cross-country travel for such purposes as prospecting, exploration, locating lines, locating potential access routes, and staking drilling locations would require prior approval from the authorized officer. Currently, OHV's are used in many areas for surveying and staking of mining claims and proposed drilling operations without advance approval from the authorized officer. This alternative would increase the amount of administrative approval required before some routine activities could occur.

The increased administrative review could increase the time required before operators can initiate activities on the ground. These timing delays, and the associated administrative burden of obtaining approval or permits, could negatively impact mineral project schedules and econom-

ics. As the mineral operators adjust their future project plans and scheduling to account for these requirements, the impact would be minimal.

Alternative 2

There would be no impact to existing holders of mineral leases or permits. Operations could occur according to the terms of the lease or permit.

Currently in areas open to cross-county travel, pre-permit surveying and staking of mining claims may be done without advance approval from the authorized officer. Under this alternative, operators without a lease or permit would have to notify the appropriate surface management agency prior to entry upon the lands for purposes of surveying and staking if they wished to use vehicles cross-country. This would increase the amount of administrative approval required as discussed under Alternative 1.

Alternative 3

The impact would be similar to Alternative 2 except there would be no impact to mineral resources in the portion of the analysis area that would remain open to motorized cross-country travel (Flathead, Kootenai, and Bitterroot National Forests).

Alternative 4

The impact would be similar to Alternative 2 except motorized cross-country travel would be allowed from December 2 to February 15 and from June 15 to August 31.

Cumulative Effects

The No Action Alternative would have no cumulative effects to mineral resources. Alternative 1 would increase the time required before operators can initiate activities on the ground but in the long term this impact would be minimal. Alternatives 2, 3, and 4 would increase the time required before casual use operations could be initiated on the ground.

UNAVOIDABLE ADVERSE IMPACTS

This section summarizes the unavoidable adverse impacts. Only those resources with adverse impacts are discussed.

Visuals and Recreation

The No Action Alternative has the most detrimental effects to recreation experiences by contributing to conflicts between users. Since Alternative 4 leaves the summer season open to motorized cross-country travel, it has the most detrimental effects to recreation experiences. Motorized users under Alternatives 1 and 2 may feel they are losing some opportunities for their recreation activity.

Vegetation and Weeds

Under the No Action Alternative, motorized cross-country travel has the potential to eliminate or seriously affect populations of the western prairie fringed orchid on the Sheyenne National Grassland in eastern North Dakota. Under Alternative 4, motorized cross-country travel would be allowed during the summer months, which coincides with the flowering period for this species. These alternatives May Affect, likely to adversely affect the western prairie fringed orchid.

SHORT-TERM USE/LONG-TERM PRODUCTIVITY

This section identifies the trade-offs between short-term use and long-term productivity of the resources involved in the alternatives. Only those resources affected are discussed.

Visuals and Recreation

Under the No Action Alternative, the continuation of user-created roads and trails could lead to more roads and trails that may need to be reclaimed when site-specific travel planning is completed. Since there would be the potential for more roads and trails, it would take longer to reclaim the roads and trails not needed for a permanent public land transportation system. Creation of more user-created roads and trails is possible under Alternative 4, but most likely there would be fewer new roads and trails than the No Action Alternative.

Vegetation and Weeds

The invasion of native plant communities by weeds can lead to short-term losses in use of habitat by wildlife, recreationists, livestock permittees, reductions in biodiversity, loss of threatened or endangered and sensitive plant habitat, and loss of topsoil through increased rates of erosion, which often leads to increased sedimentation in streams and lakes. These effects on short-term use can turn into long-term productivity losses.

IRREVERSIBLE OR IRRETRIEVABLE RESOURCE COMMITMENTS

This section identifies the extent to which the alternatives would irreversibly limit potential uses of the land and resources or irretrievably use, consume, destroy or degrade those resources. Only those resources with irreversible or irretrievable resource commitments are discussed.

Vegetation and Weeds

The invasion of native plant communities by weeds is an irretrievable commitment of resources once they are beyond the initial eradication stage. The invasion of native plant communities by weeds can lead to losses in use of habitat by wildlife, recreationists, livestock permittees, reductions in biodiversity, loss of threatened or endangered and sensitive plant habitat, and loss of topsoil through increase rates of erosion. After the initial eradication stage the effort is to try and minimize their effects on all resources and minimize their spread to uninfested areas. It means an ongoing effort into the foreseeable future of expenditures in Integrated Pest Management efforts.

CHAPTER 4: PUBLIC PARTICIPATION, LIST OF PREPARERS, AND DISTRIBUTION LIST

PUBLIC PARTICIPATION

Summary of Public Involvement

This section provides information on the public involvement activities that occurred during the preparation of this Draft Environmental Impact Statement (EIS)/plan amendment, as well as public comments received during issue scoping. A Notice of Intent, formally announcing the beginning of the planning process, was published in the Federal Register on January 22, 1999. The following table presents the chronology of public involvement.

Date	*Public Involvement*
December 1998	Initial news release to inform the public of the project
Jan. 22, 1999	Notice of Intent was published in the Federal Register
February 1999	Nearly 14,000 informational letters were sent to a combined FS/BLM mailing list
February 1999	News releases on the project were sent to newspapers throughout the analysis area
Feb/Mar 1999	Open houses and briefings were held throughout the analysis area
March 1999	News release on the extension of the public scoping period was sent to newspapers throughout the analysis area
May 1999	News release to remind the public about the extension of the comment period and that comments are most useful if received by 5/31/99
May 31, 1999	End of public scoping
August 1999	Nearly 4,500 informational newsletters were sent to a mailing list of all interested parties, agencies, organizations, and individuals
August 1999	News release on the summary of public scoping comments was sent to newspapers throughout the analysis area.

Issue Scoping and Summary of Public Comments

The scoping process required under the National Environmental Policy Act (NEPA) was followed to invite public participation and to determine the issues to be addressed. Nearly 14,000 scoping letters were mailed out based on a combined Forest Service (FS) and Bureau of Land Management (BLM) mailing list. The comment period was originally scheduled to end March 31, 1999 following a series of 35 open houses. About 1,400 people attended the open houses.

In response to a request from Congressman Rick Hill, and the agencies' commitment to an adequate public scoping period, the BLM and FS agreed to extend the scoping to May 31, 1999. What follows is a summary of nearly 3,400 letters received during the entire scoping period. These include comments from the open houses, individual letters, form letters, organizational letters, postcards, petitions, phone conversations and e-mails sent to the BLM Internet web page. Several different variations of form letters were received; many were on pre-printed postcards.

Content Analysis Process: As a joint BLM and FS project, both FS and BLM employees read and coded comments, checking each others' work and agreeing to the coding. Scoping comments were entered into the content analysis database at the Flathead National Forest. The content analysis process used was a FS method and data base system allowing for coding of comments by a broad subject (i.e., wildlife, social issues, recreation, roads, etc.) and a more refined category (i.e., wildlife displacement, historic use of an area, noxious weeds, erosion, etc.).

Some writers have said their letters are a vote for one side or another. Content analysis is not designed to be a voting process, but a way to look for the rationale behind comments, making sure that all possible issues have been analyzed and potential alternatives have been identified for the decision makers. Public comment is considered along with economic, political, legal, social and resource issues.

Demographics: These numbers and statistics below are not a random sample of public opinion, but reflect the thoughts of those people and groups who took the time to comment.

Of the nearly 3,400 letters entered in the database, most were from Montana. South Dakota had the second highest

number of comments, followed by North Dakota, Wisconsin, California, Minnesota, Washington and Idaho. Comments were also received from Oklahoma, Wyoming, Colorado, Illinois, Alaska, Maryland, New Mexico, New York, Florida, Iowa, Vermont, Arizona, Connecticut, Delaware, Utah, Virginia, Oregon, Kentucky, Maine, Michigan, Nevada, Kansas, Massachusetts, Texas, New Jersey, New Hampshire, Indiana, North Carolina, Nebraska, Ohio, Pennsylvania, and the District of Columbia.

Besides over 3,100 individuals, at least 70 businesses submitted comments, along with 12 counties, three three schools, two federal agencies, six state agencies, one tribe, three Congressional or Legislative representatives, and 100 organizations. Those groups ranged from the American Motorcycle Association to the Montana Wilderness Association.

Themes: While not counting how many were for or against the proposal, reading the letters led to some overall themes. Some people wrote that they were in favor of the proposal and that it was long overdue. Others said the proposal did not go far enough, leaving loopholes, such as legitimizing user-created roads and trails. Still others said the proposal was overkill, that any problems could and should be handled at the local level, and that the plan was another example of big government interference.

Interestingly, depending on which side of the issue they were on, some people thought the FS and BLM were either being manipulated by the off-road vehicle industry or were the pawns of environmentalists. Some blamed the rich elite people with their big pickup trucks and fancy machines for the OHV problem, while others blamed the rich elite environmentalists for trying to lock people out of public lands.

No matter what side of the OHV issue people were on, many wrote in their letters of personal experiences and places they lived and visited. They told stories of being horrified by OHV use or of how the OHV has become a form of family recreation. Many specific locations in Montana, North Dakota and South Dakota were used to illustrate a point someone was trying to make.

Some claimed the public land as theirs, and even suggested federal land should become private if the agencies couldn't manage it correctly. It was the interpretation of "correct management" that illustrated the differences in the comments.

Issues

Following is a summary of the broad subjects and more specific categories identified for this project.

Wildlife: Do OHV's disturb wildlife or do wildlife become accustomed to the sound? Do animals hate OHV's or do they just irritate people? Do OHV's actually destroy wildlife habitat and habitat effectiveness or are the agencies just using this as a pretext to justify their proposal?

These topics and others were identified by those who addressed wildlife issues. Wildlife covered everything from the wild horses of the plains, to the wolverines in the mountains. Categories under this subject included comments on general wildlife topics; Threatened, Endangered and Sensitive Species; other wildlife; habitat destruction; wildlife displacement; and wildlife harassment.

There was a concern that motorized trails impacted animals the same as roads. One letter writer asked how this plan might affect calculations, such as open road densities, which were designed to protect certain species. Some comments also touched on the impacts of OHV's on elk, deer and small mammals such as prairie dogs. One topic centered on the increased access to wildlife that OHV's provided, leading to the possibility of vulnerability and over hunting.

Recreation: Many recreation comments tied closely to social issues. Covered under this subject were comments on visual impacts of OHV's, concern over access to federal lands, how people with disabilities used OHV's to explore the outdoors, user conflicts, enforcement, and the possible exceptions to the proposal. There was general overall agreement that enforcement was the key to making either current regulations or new regulations work.

Among the letters were ones that talked about the Forest Service and BLM having to provide a wide variety of recreation opportunities, including motorized use. Others said that lakeshores were becoming racecourses, or that recreation was only one factor the agencies have to consider, along with the value of watersheds, forage, habitat and wildlife**.**

One of the exceptions being considered to the OHV proposal was that of game retrieval. This issue brought out a number of comments, including some who wanted specific hours for game retrieval, such as between 10 a.m. and 3 p.m. One person suggested limitations on game retrieval with a stiff fine attached for violators. Another one of the exceptions to the proposal being considered was camping. A few letter writers had comments on just how far off the road campers should be allowed, ranging from 100 to 300 yards.

Access to federal land was a controversial subject by itself, and became even more so when one factors in an increasing population, more private land being off limits, and road closures. Many said the answer to any problems with OHV

users could be found in enforcing current regulations, educating users, proper signs on roads and better maps. There were also those who said the agencies couldn't enforce the regulations they have now, so why enact any more.

Some OHV users said they were being blamed for conflicts with other users and asked if hikers had more rights to the land than they did. Hikers told stories of being chased off trails by OHV's, while one OHV user said hikers had cut down trees to prevent him from using a trail. Some letters contained a list of reasons why they liked or don't like OHV's, and whether or not they were responsible for damage to the environment. Often, the comments were not so much about the vehicles, as they were about the riders.

Air Quality: About two-dozen comments on air quality were received, and most dealt with air pollution caused by OHV's.

Alternatives: This subject heading captured comments on general alternative suggestions; variances or permits; and system roads. Under alternatives, many different combinations were being suggested by the public. Some wanted only roads and not trails open to OHV's. Others wanted no further restrictions, saying that the agencies currently have the mechanisms in place to close problem areas. Some comments, including a number of form letters, wanted an alternative in the EIS that looked at designated or system roads, as opposed to existing roads. The concern was that by not using system roads as a criterion would mean all user-created (as opposed to agency-created) roads and trails would be legalized.

Some people asked for a compromise, providing OHV play areas so the rest of public land would be non-motorized, or perhaps OHV parks. Others suggested prohibiting use in subalpine and alpine zones, or riparian and wetland zones, or at certain times of the year. Inventory of roads and trails was also a topic in some letters, with one writer suggesting the use of satellite photos to find all existing roads and trails. Still another person offered the alternative of encouraging private commercial developments for OHV's. Many tackled the subject of whether areas should be "closed unless signed open" or "open unless signed closed." Another urged the agencies to develop a "Quiet Trails Alternative" keeping vehicles on roads, and foot and hoof traffic on trails. There was also the "Wildlife/Wildlands Alternative" which was quoted in a number of individual and form letters.

Social: Social concerns and issues were a large part of this proposal. Under this category were comments on historic use; attachment to the land; the face of the changing West; and the impact of government regulations. When people talked about living in the West, it could mean a variety of things, from enjoying the solitude of the mountains, to finding a safe place for kids to ride OHV's.

Economics: Again, both sides of the issue were heard in the category of economics. Some said the western economy was bolstered by its beauty and serenity, while others said limiting OHV use would hurt the local economies. Some touched on OHV sales in general, while another said to factor in the cost of watershed rehabilitation when OHV trails cause damage and erosion.

Planning/NEPA: The main categories covered comments that stated the proposal was too broad and covered too wide an area; there were those who said waiting 10-15 years to implement site specific rules was too long; others who said the agencies currently have the authority to implement changes in OHV regulations; and those who said the site-specific work needed to be done before the broad scale decision.

Vegetation: Noxious weeds were a major topic in the vegetation category, as was soil erosion. People differed in opinion as to who was responsible. For spreading noxious weeds, some called OHV's weed seed magnets, while riders said you also had to point the finger at a long list of animals ranging from cows and horses to deer and bears.

Water: Comments on water covered topics of OHV's harming aquatic habitats, water quality, and specific remarks that OHV trails accelerated erosion, which in turn moved silt into water sources.

Roads/Trails: The overall topic of access to federal lands emerged in this category. Some comments wanted all roads and trails closed to OHV's, while others thought OHV impact could be dispersed by opening more roads, and still others wanted OHV's banned from all trails. The main question from many who wrote was about how the agencies defined a road and a trail. Still others were concerned that the proposal may endorse "illegal" roads. There was also discussion in some comments whether areas should be "open unless signed closed" or "closed unless signed open". R.S. 2477 also became a topic of some form letters. (R.S. 2477 stands for Revised Statute 2477, which was adopted in 1866 to help settle the West by establishing roads and trails, prior to the creation of agencies such as the U.S. Forest Service). The question of cow trails also intrigued one writer.

Cultural/Historic: The comments received under this subject covered general concerns about OHV users running over cultural sites, and conversely, that OHV users get blamed for someone else's vandalism.

Public Involvement: Topics under this subject dealt with the BLM RAC's (Resource Advisory Councils), comments asking for different times and locations for open houses, a request for public meetings instead of open houses, the desire to see professional public opinion surveys used instead of scoping comments, and a request for public land managers to go out on OHV's to see what it's like.

Others Things We Heard: Many ideas emerged from those who commented. Everything from imposing fines, to decals to regulating advertising was suggested. There were those that wanted snowmobiles analyzed in the EIS because they were motorized, and those who wanted the agencies to study the impacts of horses, cows, bicycles and others who might impact the land.

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Bill Kirchhoff	Forest Service	GIS Mapping
Ron Normandeau	Forest Service	GIS Mapping

DISTRIBUTION LIST

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Blaine
Broadwater
Carbon
Carter
Cascade
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Custer
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Garfield
Glacier
Golden Valley
Granite
Hill
Jefferson
Judith Basin
Lake
Lewis and Clark
Liberty
Lincoln
Madison
McCone
Meagher
Mineral
Missoula
Musselshell
Park
Petroleum
Phillips
Pondera
Powder River
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Ravalli
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Stillwater
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Golden Valley
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Kidder
McHenry
McKenzie
McLean
Mercer

Morton
Mountrail
Oliver
Pierce
Ransom
Renville
Richland
Sheridan
Sioux
Stark
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Ward
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Butte
Campbell
Charles Mix
Clay
Corson
Custer
Fall River
Gregory
Haakon
Harding
Jackson
Jones
Lawrence
Lyman
Marshall
Meade
Pennington
Perkins
Stanley
Sully
Tripp
Yankton
Ziebach

State Agencies

Governor Of Montana, Marc Racicot
Governor Of North Dakota, Edward Schafer
Governor Of South Dakota, William Janklow
Montana Bureau Of Mines & Geology
Montana Dept. Of Agriculture
Montana Dept. Of Environmental Quality
Montana Fish, Wildlife & Parks
Montana Dept. Of Transportation
Montana Dept. Of Natural Resources and Conservation
Montana Environmental Quality Council
Montana Parks Association
Montana State Historic Pres. Office
North Dakota Game And Fish Dept.
North Dakota State Lands Dept.
South Dakota Dept. Of Agriculture
South Dakota Dept. Of Game, Fish & Parks
South Dakota Dept. Of School & Public Lands

Congressionals

US Representative, Helen Chenoweth
US Representative, Rick Hill
US Representative, Earl Pomeroy
US Representative, John Thune
US Senator, Max Baucus
US Senator, Conrad Burns
US Senator, Kent Conrad
US Senator, Larry Craig
US Senator, Michael Crapo
US Senator, Thomas Daschle
US Senator, Byron Dorgan
US Senator, Tim Johnson

Federal Agencies

DENR
Federal Energy Regulatory Commission
Federal Highway Administration
Federal Reserve Bank
US Air Force
US Army Corp Of Engineers
US Environmental Protection Agency
USDA Farm Service Agency
USDA Natural Agricultural Library
USDA Natural Resources Conservation Service
USDA Office of Civil Rights
USDA Snow Survey
USDA Soil Conservation Service
USDA Wildlife Services
USDI Bureau Of Indian Affairs
USDI Bureau Of Reclamation
USDI Fish And Wildlife Service
USDI National Park Service
USDI Office of Environmental Affairs

Organizations, Businesses and Others

320 Ranch
63 Ranch
Access Montana Outdoors Inc.
Advantage Resources Inc.
Adventure Skills Guide Service
Agri-News
Alliance For The Wild Rockies
Allied Mfg. Corp.
Alpine Yamaha
American Bar Landowners

American Fisheries Society
American Forest And Paper Association
American Motorcyclist Association
American Wildlands
Anaconda Snowmobile Club
Anaconda Sportsmen's Club
Asarco Inc. - Troy Unit
Associated Press
AT&T
Audio Engineering Service
Audubon Yellowstone
Audubon Society
Augusta Livestock Associaton
B.W. Outfitters
Back Country Adv. Snowmobiles
Back Country Horsemen
Back Country Horsemen-Mission Valley
Back Country Horsemen-Missoula
Barthelmess Ranch Inc
Bear Paw Energy Inc.
Beaverhead County Planning Board
Beaverhead Sno-Riders
Benbow ATV Rentals
Bessette Ranch Company
Big Hole Snowmobile Club
Big Sandy NRCS Office
Big Sky Coal Co.
Big Sky County Trail Preservation
Big Sky Cyclery
Big Sky Guide & Outftrs Inc.
Big Sky Trailriders
Big Sky Upland Bird Association
Billings Gazette
Billings Land Use Committee
Billings Motorcycle Club
Billings Rod & Gun Club
Bitterroot Audubon
Bitterroot Chamber Of Commerce
Bitterroot Grizzly Motorcycle Alliance
Bitterroot Outfitters
Bitterroot Rough Riders Ohv Club
Black Hills 4-Wheelers
Black Hills Off Roaders
Black Hills Regional Multiple Use Coalition
Black Mountain Outfitters
Black Ranch, Inc
Blackhills Snowmobile Council
Blue Ribbon Coalition Inc.
Blue Ribbon Environmental Products, Inc.
Blue Ribbon Flies
Boulder Outfitter & Guide Assn
Bowman Co. Pioneer
Brainerd Foundation
Bridger Canyon Property Owners
Brilliant Signs & Grafix
Broadwater County Weed Board
Broken Hart Ranch
Bronken's
Brown's Pottery and Gifts
Buggy Creek State Coop. Grazing Dist.
Cable Mountain Mine Inc
Cameron Ranch
Camp Cedar Design
Camp Kooch-I-Ching
Can-Am Search & Rescue
Canavan Logging
Capital Trail Bike Riders
Carbon County News
Cargill Outfitting
Carter County Sheep & Cattle Growers
Cascade Co. 4-Wheelers
Cascade County Air Quality
Cascade County Weed Supervisor
Castle Mt. Livetock Association
Ceda-Pine Veneer, Inc.
Cenex Harvet States
Center For The Rocky Mtn West
Central Montana RC & D
Central Montana Resource Advisory Council
Central Montana Trail Users
Central Montana Wildland Assoc.
Chain Of Lakes Homeowners Association
Chamber Of Commerce And Agriculture
Charlie Russell Backcountry Horsemen
Checkerboard Cattle Company
Cherry Creek Angus Ranch
Choteau Acantha
Circle 8 Ranch
Citizens For A Vehicle Free Nipomo Dunes
Citizens For A Weed Free Future
City Of Troy
Coal Age - Intertec Publishing
Coal Creek CSGD
Coalition For Canyon Preservation
Cody Country Outfitters
Cold Mountain, Cold Rivers
Coldwell & Sons
Coldwell Banker - RCI Realty
Colorado Grizzley Project
Communities For A Great NW
Constellation Services
Continental Divide Trail Alliance
Continental Divide Trail Society
Conway Electric
Cooke City Store
Cornwell Ranch
Cowan Ranch
Crazy Mountain Outfitters & Guide
Cronk Ranch Inc
Cut Bank Snowgoers

Dakota Territory Cruisers
Dakotas Resource Advisory Council
Daniels & Associates Inc
Deer Lodge County Planning Board
Deer Lodge Snowmobile Club
Defenders Of Wildlife
Dell Bacon Ranch Co.
Desert Coulee Ranches
Diamond Hitch Outfitters
Dick Irvin, Inc.
Dog Creek Campground
Double D Ranch
Double Eagle Ranch
Double H Ranch, Inc.
Double J Farms
Durnell's Custom Woodcraft
E K Lehmann And Associates Of Montana, Inc
East Pioneer Experimental Stewardship Program
East Rosebud Lake Association
Eastern Montana Resource Advisory Council
Eastern Sanders County Sportsman Grp.
Ecology Center
El Rancho Loco
Elenburg Exploration Inc
Elk Run Ranch
Empire Resources
Engle Ranch, Inc.
EOTT Energy Corporation
Evers Ranch
Express Pipeline Partnership
F. H. Stoltze Land & Lumber Co.
Faunawest Wildlife Consultants
Fergus County Extension Service
Fields Families
Figgins Sand And Gravel, Inc.
First Creek Ranch
Five Valleys Audubon Society
Five Valleys 4 Wheelers
Fix Ranch
Flathead Audubon Society
Flathead Snowmobile Club
Flathead Wildlife, Inc.
Flying J Oil & Gas, Inc.
Fogland Ranch Co.
Forest Guardians
Forestry Library, Univ. Of Minn.
Fort Benton Chamber Of Commerce
Forty Bar Ranch
Fossum Ready Mix
Friends Of The Bitterroot
Friends Of The Rocky Mountain Front
Friends Of The West
Friends Of The Wild Swan
Frontier 4x4 Club
Frontier Resort
Gallatin County Planning Dept
Gallatin Valley Snowmobile Assn.
Gallatin Wildlife Association
Garrison Sportsman Club
Geary Brothers
Geological Resource Consulting
Glacier Two Medicine Alliance
Glasgow Courier
Glasgow Distributors Inc
Glasgow Irrigation District
Glendive Ranger Review
Golden Bear Outfitters
Golden Valley Sheriff's Office
Granite County Extension
Granite State Four Wheelers
Grantier Livestock Inc
Grassroots For Multiple Use
Great Burn Study Group
Great Falls Snowmobile Club
Great Falls Trail Bike Riders Assoc.
Great Falls Tribune
Great Northern Properties
Great Plains Resources Inc
Greater Yellowstone Coalition
Grizzly Country
Grizzly Outfitters
Gros Ventre Treaty Committee
Hagenbarth Livestock
Haglund And Kirtley
Happy Saddle Tramps
Harding County Extension Agent
Harding County Farm Service Agency
Hargrave Cattle & Guest Ranch
Havre Answering Service
Hawk I'm Your Sister
Hawley Mountain Guest Ranch
Headwater RC&D Area, Inc.
Hearing Instruments Specialists
Helena Chamber Of Commerce
Helena Forest Conservation Coalition
Helena Outdoor Club
Hell Creek Guest Ranch
Hellgate River Ranch
H.F. Hardy Decorating
Hidden Valley Ranch Outfitters
High Country Adventures
High Country Discovery
High Plains News Service
Highland Rose Contracting & Supply, LLC
Holland Ranch
Holt & Baker Ranches
Homestake Oil & Gas
Homestead Valley Trust
Hoot Owl Farm
Horse Creek Grazing Association

Horse Prairie Ranch Kwd Assoc., L.C.
Hughes And Sons Cattle Co.
Hunkpapa Sioux
Hunt Oil Co.
IEPLC Forest Watch
IX Ranch Co.
J & J Buide Service
J & L 4-Wheel Drive Center, Inc.
Jack Atcheson Guide Service
Jackpine Savages
Jackson Ranches
Jarrett Brothers
Jefferson County Weed District
Jenni Ranch
Johns Ranch, Inc.
Johnson Family Partnership
Johnson Ranch Inc
Johnson Tuning Fork Ranch
Kalispell Area Chamber Of Commerce
KCS Mtn Resources Inc
KCTZ
KEMC Radio
Kettle Range Conservation Group
KFYR TV
KN Energy
KRTV
Lakeview Ranch
Land Planning Committee
Langen Ranch
Last Chance Audubon Society
Lawyer's Nursery
Lazy Au Ranch Company Inc.
Lazy E4 Cattle Company
Lazy Seven-Up Ranch
Lehfeldt Ranch
Lenhardt Agency
Lenington Farms
Lewis & Clark County Planning
Lewis & Clark Trail Heritage Foundation
Lewis Trust 1990
Lewistown News Argus
Liberty County Conservation District
Lightning Creek Outfitters
Lincoln County Economic Development Council
Lincoln Financial Advisors Corp.
Little Belts Snowmobile Club
Little Missouri Grazing Association
Lo Bar Cattle Co.
Louisiana Pacific Corporation
Loure Petrie Ranch Partnership
Lubrecht Forest
Lutheran Bible Camp, Inc.
Madison County Weed Supervisor
Madison Fork Ranch
Madison Gallatin Alliance
Magic City 4-Wheelers
Magic City 4x4's
Malta Chamber Of Commerce
Malta Irrigation District
Malta Public Schools
Marble Law Office
Marias River Land And Livestock
Masterlinks Cycle Club
McCone Electric Cooperative Inc.
McColly Ranch Inc
McIntosh Ranch LLP
McIntyre Ranch Inc.
McKenzie County Grazing Assoc
McKenzie Electric Cooperative, Inc.
McLaughlin Insurance Services
Meagher County Little Belters
Meagher Weed Board
Mecaha Cattle Company
Medicine Rocks Ranch
Medora Grazing Assoc.
Midwest 4 Wheel Drive Association
Mile High Backcountry Horsemen
Milk River Ranch, Inc.
Miller Mountain Corporation
Mineral Co. Watershed Cncl
Mineral County Environ Planning
Minnesota Early Bronco Club
Missoulian
Mobile Tech Computers
Mon-Dak Outfitters
Montalban Oil & Gas Operations Inc
Montana 4x4 Association
Montana Assoc. Of Grazing Districts
Montana Association Of Counties
Montana Bowhunters Association
Montana Chapter Of The Wildlife Society
Montana Council of Trout Unlimited
Montana Dakota Utilities Co.
Montana Ecosystems Defense Council
Montana Environmental Info. Center
Montana Farmer's Union
Montana House Of Representatives, Chris Ahner
Montana House Of Representatives, Paul Clark
Montana House Of Representatives, John Cobb
Montana House Of Representatives, David Ewer
Montana House Of Representatives, Patrick Galvin
Montana House Of Representatives, Edward "Ed" Grady
Montana House Of Representatives, Marian Hanson
Montana House Of Representatives, Hal Harper
Montana House Of Representatives, Deb Kottel
Montana House Of Representatives, Gay Ann Masolo
Montana House Of Representatives, Scott Orr
Montana House Of Representatives, John "Sam" Rose
Montana House Of Representatives, William "Bill" Ryan
Montana House Of Representatives, Trudi Schmidt

Montana House Of Representatives, J. G.Shockley
Montana House Of Representatives, Richard Simpkins
Montana House Of Representatives, Joe Tropila
Montana House Of Representatives, Carley Tuss
Montana House Of Representatives, William Wiseman
Montana House Of Representatives, Diana Wyatt
Montana Legislature 56th Session, Linda Stoll
Montana Mining Association
Montana Native Plant Society
Montana Nature Conservancy
Montana Night Riders
Montana Outfitters & Guides Association
Montana Petroleum Association
Montana Pilot's Association
Montana Power Co
Montana Public Lands Council
Montana Rawhide
Montana River Action Network
Montana Senate, Gary Aklestad
Montana Senate, Sue Bartlett
Montana Senate, Thomas "Tom" Beck
Montana Senate, Bf "Chris" Christianens
Montana Senate, Wm. S. Crismore
Montana Senate, Steve Doherty
Montana Senate, Mike Foster
Montana Senate, Eve Franklin
Montana Senate, John Hertel
Montana Senate, Kenneth "Ken" Mesaros
Montana Senate, Mignon Waterman
Montana Senate, Bill Wilson
Montana Snowmobile Association
Montana State University
Montana Stockgrowers Assoc.
Montana Trail Vehicle Riders Assoc.
Montana Trails Association
Montana Trout Unlimited
Montana Wilderness Association
Montana Wildlife Association
Montana Wildlife Federation
Montana Woolgrowers Assoc
Montanans For Multiple Use
Moosecan Gully Ranch
Mor Gran Sious Electric
Mothershead Ranch, Inc.
Motorcycle Industry Council
Mountain Sports Inc.
Mountainfit
MT Chamber Of Commerce
MT Chapter American Fisheries
MT Chapter Irwa
MT Trout Unlimited
Multiple Use Coalition
Mungas Company
Munroe Ranch Company Inc
Nardin & Nardin
National Audubon Society
National Off-Highway Vehicle Conservation Council
National Wildlife Federation
Native Forest Network
Native Forest Network, Yellowstone
Natural Bridge Ranch
Nature Conservancy Of MT
Neighborhood Planing Site Design
Newton Aviation
Nine Quarter Circle Ranch
Nine Sixty Nine Ranch
Northern Plains Resource Council
Noranda Mining And Exploration
North American Exploration, Inc.
North Fork Improvement Association
North Fork Preservation Assoc.
Northern Hills Birders
Olsen Ranch
Orion, The Hunter's Institute
Outfitters
Park County Rod & Gun Club
Parkin Performance & Polaris
Partners Bed & Biscuit
Paulsen Land Corporation
Penco Power Products
Permits West, Inc.
Phillips County Library
Pine Tree Livestock
Pintlar Audubon Society
Planning & Resource Management
Plum Creek Lumber Co
Pondera Sportman's Club
Powder River Outfitters
Powell County Planning Board
Powell County Progress
Powers Elevation Co., Inc.
Predator Project
Prickly Pear Sportsman Association
Private Lands/Public Wildlife Council
Pryor Mtn Wild Horse Assn
PWOA
Quarter Circle D B Inc
R. E. Miller & Sons
Ranch Resources, L.L.C.
Ranck Oil
Range Telephone Coop Inc
Rapid City Journal
Ravalli Co. Farm Bureau
Reclamation Services Corp
Rice Ranches, Inc.
Richardson Log Furniture
Rimrock 4x4 Club
Rimrock Explosives
Rimrock Trailriders
Robert Hawkins Inc.

Rock Creek Fishermans Mercantile
Rocky Boy Indian Reservation
Rocky Mountain Elk Foundation
Rocky Mountain Log Homes
Rolfsrud Ranch
Ron Mills Outfitting
Rosebud Audubon
Rusher Air Conditioning
Russell Country Sportsmen's Assoc.
SD Hereford Ranches, Inc.
SD Trailriders Assoc.
SE Electric Coop
Seven-C Quarter Outfitters
Sheridan Gun Club
Sheyenne Valley Grazing Assoc
Shotgun Construction
Sierra Club
Sierra Club - Teddy Roosevelt
Sierra Club, Montana Chapter
Silver Springs Ranch
Silver Tip Ranch
Silverbow Archers
Simpson, Thacher & Bartlett
Sitz Angus Farms, Inc.
Skyline Sportsmen's Assn.
Slope Count State's Attorney
Smiling Gulch Ranch
Smith 6 Bar S Livestock
Snappy Sport Senter
Snowmobile North Dakota
Society Of Range Management
Solf Brothers
Soup Cr Ranch
South Dakota Public Lands Council
South Hills Water & Sewer District
Southeastern Livestock Assoc
Southeastern Montana Sportsmen Assn.
Southern Illinois University
Southwest Montana Wildlands Alliance
Spirit Lake Alliance
Starshine
State Soil Conservation Committee
Stender Ranch, Inc.
Stephens Timber Consulting
Steve's Sport Center
Stone Container
Story Ranch
Sula Country Store
Summit Motor Sports
Summit River Corp.
Sunset Irrigation District
SW MT Wildlands Alliance
Swan View Coalition
SWFWDA
T. Crawford Enterprises
T Diamond Livestock
Team Bozeman
Tebay Ranch
Tee Bar Ranch Company
Templin Real Estate
Terrett Ranch
Teton County Conservation District
Teton Livestock Association
The Catering Co
The Ecology Center
The Malletta Family Of Funeral Homes
The Nature Conservancy
The Post-Register
The Real Estate Center Of Sturgis
The Roll
The Wilderness Society
The Wildlife Society
Theodore Roosevelt Memorial Ranch
Three Forks Chamber Of Commerce
Three Rivers Backcountry Horsemen
Tierra Exploration Inc.
Tilstra Ranch
Timber Stone Handcrafted Log Homes
Timberline Oil & Gas Corp
Toston Rod & Gun Club
Two Medicine Alliance
Townsend Star
Trout Unlimited
True Oil Company
Turner Enterprises
Turtle Mtn. Band Of Chippewa
Under Wild Skies Outfitting
University Of Montana
University Of Michigan
Upper Canyon Outfitters
Upper Clark Fork BCH
Upper Missouri River Group-Sierra Club
Upper Musselshell Sports Club
Upper Yaak Community Assoc.
US West Communication Inc.
Utah Shared Access Alliance
Varmint Hunters Association, Inc.
Veseth Ranch
Vigilante Electric
Vigilante Snowmobilers
WA Prospectors Mining Assoc
Wade Lake Resort
WalshRanch
Wednesday Outdoor Women
West Fork Citizens Committee
Westech
Western Environmental Trade Assn
Western Forest Industries Assoc.
Western Montana Clinic
Western Montana Cons. Assn.

Western Montana Wildlife
Western Montana Resource Advisory Council
Western South Dakota Fur Harvesters
Wharf Resources
Wheatland County Sheriff's Office
Whitefish Pottery
Wild Horse Organized Assistance, Inc.
Wild Skies
Wild Trout Outfitters
Wild Wind Records
Wilderness Watch
Wildlands Center For Preventing Roads
Wildlife Management Institute
Williston Basin Pipeline Co.
Williston Resource Office
Wind River Agency
Wind River Shoshone Business Council
Wisconsin Four Wheel Drive Association
Witmer Insurance Services, Inc.
Wolverton Saddle Club
WY SawmillsIncorporated
Xeno Inc.
Yates Petroleum Company
Yellowstone Arctic /Yamaha
Yellowstone Foot & Ankle Center
Yellowstone Valley Audubon Society

A summary of the draft EIS/plan amendment was also mailed to about 3,700 individuals.

GLOSSARY

This glossary defines terms used by the U.S. Forest Service and Bureau of Land Management to explain natural resource concepts and management activities specific to this draft EIS/plan amendment.

AFFECTED ENVIRONMENT. The natural, physical and human-related environment that is sensitive to changes from proposed actions.

AIR POLLUTANT. Any substance in air that could, if in high enough concentration, harm humans, animals, vegetation, or material. Air pollutants may include almost any natural or artificial matter capable of being airborne, in the form of solid particles, liquid droplets, gases, or a combination of these.

AIR QUALITY. Refers to standards for various classes of land as designated by the Clean Air Act, P.L. 88-206: Jan. 1978.

ALTERNATIVE. A mix of management prescriptions applied to specific land areas to achieve a set of goals and objectives. Each alternative represents a different way of achieving a set of similar management objectives. Sometimes the term "action alternative" is used when it is desirable to recognize that there is a "no action" alternative under which the proposed activity would not take place.

AMENITY. Resource use, object, feature, quality, or experience that is pleasing to the mind or senses; typically refers to values for which monetary values are not or cannot be established, such as scenic or wilderness values.

ANALYSIS AREA. The geographic area defining the scope of analysis for the project. Sometimes for a particular resource, the analysis area may have to be larger when effects have potential to extend beyond the boundaries of the proposal.

APPEAL. A request by any party dissatisfied with a decision of a forest officer to have the decision reviewed at a higher organizational level in the Forest Service and, where appropriate, by the secretary.

BENEFICIAL USES. Attributes that are considered useful products of the resource. They may include (but are not limited to); recreation, production of salmonid fishes, drinking water, power generation, and irrigation.

BEST MANAGEMENT PRACTICES. Methods, measures or practices to prevent or reduce water pollution, including but not limited to, structural and non-structural controls, operation and maintenance procedures, other requirements and scheduling and distribution of activities. Usually BMP's are selected on the basis of site-specific conditions that reflect natural background conditions and political, economic, and technical feasibility.

BIG GAME. Those species of large mammals normally managed as a sport hunting resource.

BIOLOGICAL DIVERSITY. The variety of life and its processes including bacteria and fungi as well as higher forms of life such as plants, insects, birds, fish and mammals.

CASUAL USE (BLM Locatable). Mining activities that only negligibly disturb federal lands and resources. Casual use does not include the use of mechanized earth moving equipment or explosives or the use of motorized equipment in areas closed to off-road vehicles. Under casual use, operators do not have to notify BLM, and operations do not need to be approved. But operations are subject to monitoring by BLM to ensure that federal lands do not undergo unnecessary or undue edgradation. Casual use operations must be reclaimed.

CLASS I AREA. Under the 1977 Clean Air Act, amendments, all international parks, National Parks greater than 6,000 acres, and national Wilderness Areas greater than 5,000 acres which existed on August 7, 1977. This class provides the most protection to pristine lands by severely limiting the amount of additional air pollution that can be added to these areas.

CLIMATE. The composite or generally prevailing weather conditions of a region throughout the year, averaged over a series of years.

CLOSED ROAD. A national forest road or segment which is restricted from certain types of use during certain seasons of the year. The prohibited use and the time period of closure must be specified. The closure is legal when the forest supervisor has issued an order and posted it in accordance with chapter 36 of the CFR section 261.

CODE OF FEDERAL REGULATIONS (CFR). The official, legal tabulation or regulations directing federal government activities.

COMMUNITY. A group of one or more populations of plants and animals in a common spatial arrangement; an ecological term used in a broad sense to include groups of various sizes and degrees of integration.

CONIFER. Any of a group of needle- and cone-bearing evergreen trees.

COVER. Vegetation used by wildlife for protection from predators, breeding and rearing of young (hiding cover), or to ameliorate conditions of weather (thermal cover).

CROSS-COUNTRY. See definition in Chapter 2.

CULTURAL RESOURCES. The physical remains of human activity (artifacts, ruins, burial mounds, petroglyphs, etc.) having scientific, prehistoric, or social values.

CUMULATIVE EFFECT. The impact on the environment which results from the incremental impact of the action when added to other actions. Cumulative impacts can also result from individually minor but collectively significant actions taking place over a period of time.

DECIDING OFFICER. The Forest Service or Bureau of Land Management employee who has the authority to select and/or carry out a specific planning action.

DEMOGRAPHIC. Related to the vital statistics of human populations (size, density, growth, distribution, etc.) and the effect of these on social and economic conditions.

DESIGNATED ROADS AND TRAILS. Specific roads and trails identified by the agencies where some type of motorized vehicle use is appropriate and allowed either yearlong or seasonally.

DIRECT EFFECTS. Effects on the environment which occur at the same time and place as the initial cause or action.

DESIRED FUTURE CONDITION. A portrayal of the land or resource conditions which are expected to result if goals and objectives are fully achieved.

DEVELOPED RECREATION. Outdoor recreation requiring significant capital investment in facilities to handle a concentration of visitors on a relatively small area. Examples are ski areas, resorts, and campgrounds.

DISPERSED RECREATION. Outdoor recreation in which visitors are diffused over relatively large areas. Where facilities or developments are provided, they are more for access and protection of the environment than for the comfort or convenience of the people.

DIVERSITY. The relative distribution and abundance of different plant and animal communities and species within an area.

ECOSYSTEM. The complete system formed by the interaction of a group of organisms and their environment. In this context of activities on national forest lands, humans are considered a part of the ecosystem.

ECOSYSTEM MANAGEMENT. Using an ecological approach to achieve the multiple-use management of national forest and grasslands by blending the needs of people and environmental values in such a way that represents diverse, healthy, productive, and sustainable ecosystems.

EFFECTS (or impacts). Environmental consequences (the scientific and analytical basis for comparison of alternatives) as a result of a proposed action. Effects may be either direct, which are caused by the action and occur at the same time and place, or indirect, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable, or cumulative.

EMISSION. A release into the outdoor atmosphere of air contaminants.

ENDANGERED SPECIES. Any plant or animal species which is in danger of extinction throughout all or a significant portion of its range. (Endangered Species Act of 1973).

ENVIRONMENT. The aggregate of physical, biological, economic, and social factors affecting organisms in an area.

ENVIRONMENTAL ANALYSIS. An analysis of alternative actions and their predictable environmental effects, including physical, biological, economic, and social consequences and their interactions; short- and long-term effects; direct, indirect, and cumulative effects.

ENVIRONMENTAL IMPACT STATEMENT (EIS). A detailed statement prepared by the responsible official in which a major Federal action which significantly affects the quality of the human environment is described, alternatives to the proposed action provided, and effects analyzed.

EPHEMERAL STREAMS. Streams that flow only as a direct response to rainfall or snowmelt events. They have no baseflow.

EROSION. Detachment or movement of soil or rock fragments by water, wind, ice, or gravity. Accelerated erosion is much more rapid than normal, natural, or geologic erosion, primarily as a result of the influence of activities of people animals, or natural catastrophes.

FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976 (FLPMA). Public Law 94-579, October 21, 1976, often referred to as the BLM's "Organic Act," which

provides the majority of the BLM's legislated authority, direction, policy and basic management guidance.

FEDERAL REGISTER. A daily publication which reports Presidential and Federal Agency documents.

FISH HABITAT. The place where a population of fish species lives and its surroundings; includes the provision of life requirements such as food and cover.

FISHERY. The total population of fish in a stream or body of water and the physical, chemical, and biological factors affecting that population.

FLOODPLAIN. The lowland and relatively flat areas adjoining inland and coastal waters, including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

FLORA. The plant life characteristic of a region, period, or special environment.

FORAGE. Vegetation used for food by wildlife, particularly big game wildlife and domestic livestock.

FORB. Any herbaceous (herb-like) plant other grass or grass-like plants.

FOREST COVER TYPE. A descriptive classification of forestland based on the present vegetative species composition and/or locality (i.e., lodgepole pine, mixed conifer). Most stands are given a classification (stratum label), based on aerial photo interpretation, that includes the forest cover type, the size class, density class, and stand development phase.

FOREST PLAN. Refers to the various Forest Plans for each National Forest.

FOREST SYSTEM ROAD. A road wholly or partly within or adjacent to and serving the National Forest System and which is necessary for the protection, administration and utilization of the National Forest System and the use and development of its resources.

FRAGMENTATION. Process by which habitats are increasingly subdivided into smaller units, resulting in their increased insularity as well as losses of total habitat area.

HABITAT. The sum total of environmental conditions of a specific place occupied by a wildlife species or a population of such species.

HABITAT TYPE. An aggregation of all land areas potentially capable of producing similar plant communities at climax.

HARDWOODS. A conventional term for the wood of broadleaf trees. In the decision area these trees are generally confined to areas near water.

INDIRECT EFFECTS. Secondary effects which occur in locations other than the initial action or significantly later in time.

IN-MIGRATION. The movement of new residents into an area.

INTERAGENCY GUIDELINES. A document which was originally developed in the Yellowstone grizzly bear ecosystem and later applied to all grizzly habitat through congressional mandate. Previously known as the "Yellowstone Guidelines" ,it identifies important, specific management measures regarding the conduct of multiple use activities in grizzly bear habitat and parameters for identifying the sensitivity of grizzly bear habitat to human activities.

INTERDISCIPLINARY TEAM (IDT). A group of resource professionals with different expertise that collaborate to develop and evaluate resource management decisions.

INTERMITTENT STREAM. A stream which flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow.

IRRETRIEVABLE IMPACT. Commitment of a resource would be considered "irretrievable" when the project would directly eliminate the resource, its productivity, and/or its utility for the life of the project.

IRREVERSIBLE IMPACT. The commitment of a resource would be "irreversible" if the project started a "process" (chemical, biological, and/or physical) that could not be stopped. As a result, the resource, or its productivity, and/or its utility would be consumed, committed, or lost forever.

ISSUE INDICATORS. A "yardstick" for measuring or comparing any changes associated with each issue or concern by alternative.

LANDSCAPE. The aspect of the land that is characteristic of a particular region or area.

LIFEWAYS. The manner and means by which a group of people lives; their way of life. Components include language(s), subsistence strategies, religion, economic structure, physical mannerisms, and shared attitudes.

LOWER MONTANE. A terrestrial community that generally is found in drier and warmer environments than the

montane terrestrial community. The lower montane community supports a unique clustering of wildlife species.

MANAGEMENT AREA. Geographic areas, not necessarily contiguous, which have common management direction, consistent with the Forest Plan allocations.

MANAGEMENT DIRECTION. A statement of multiple use and other goals and objectives, along with the associated management prescriptions and standards and guidelines to direct resource management.

MANAGEMENT INDICATOR SPECIES (MIS). A species of wildlife, fish, or plant whose health and vigor are believed to accurately reflect the health and vigor of other species having similar habitat and protection needs to those of the selected indicator species.

MITIGATION. Actions to avoid, minimize, reduce, eliminate, replace, or rectify the impact of a management practice.

MONITORING AND EVALUATION. The evaluation, on a sample basis, of Forest Plan management practices to determine how well objectives are being met, as well as the effects of those management practices on the land and environment.

MONTANE. Inhabiting the cool, moist ecological zone located near the timberline and usually dominated by evergreen trees.

MOTORIZED CROSS-COUNTRY TRAVEL. See definition in Chapter 2.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA). An act which encourages productive and enjoyable harmony between man and his environment; promotes efforts to prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; enriches the understanding of the ecological systems and natural resources important to the Nation; and establishes a Council on Environmental Quality.

NATIONAL FOREST MANAGEMENT ACT (NFMA). A law passed in 1976 as amendments to the Forest and Rangeland Renewable Resources Planning Act that requires the preparation of Regional and Forest plans and the preparation of regulations to guide that development.

NATIONAL FOREST SYSTEM. All national forest lands reserved or withdrawn from the public domain of the United States, all national forest lands acquired through purchase, exchange, donation, or other means, the national grasslands and land utilization projects administered under Title 111.

NATIVE FISH. Fish species that are indigenous to a region's waters, as opposed to introduced or exotic fish.

NATIVE SPECIES. Species that normally live and thrive in a particular ecosystem.

NEPA PROCESS. An interdisciplinary process, mandated by the National Environmental Policy Act, which concentrates decisionmaking around issues, concerns, alternatives and the effects of alternatives on the environment.

NO ACTION ALTERNATIVE. The No Action alternative is required by regulations implementing the National Environmental Policy Act (NEPA) (40 CFR 1502.14). The no action alternative provides a baseline for estimating the effects of other alternatives. Where a project activity is being evaluated, the no action alternative is defined as one where no action or activity would take place.

NONDESIGNATED ROADS AND TRAILS. Roads and trails that have not yet gone through site specific travel planning to determine if they should be open, closed, or restricted to motorized vehicle use or roads and trails that have gone through travel planning and dtermined that motorized vehicle use is not appropriate and is not allowed.

NONGAME SPECIES. All wild animals not subject to sport hunting, trapping or fishing regulations.

NONPOINT SOURCE POLLUTION. Pollution whose source is not specific in location; the sources of the pollutant discharge are dispersed, not well defined or constant. Examples include sediments from logging activities and runoff from agricultural chemicals.

NOXIOUS WEEDS. A plant species designated by Federal or State law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or nonnative, new, or not common to the United States. According to the Federal Noxious Weed Act (PL 93-639), a noxious weed is one that causes disease or has other adverse effects on people or their environment and therefore is detrimental to the agriculture and commerce of the United States and to the public health.

OFF-HIGHWAY VEHICLES. Any motorized wheeled vehicle designed for cross-country travel over any type of terrain.

OPEN TO PUBLIC TRAVEL. Except during scheduled periods, extreme weather conditions, or emergencies, is open to the general public for use with a standard passenger auto, without restrictive gates or prohibitive signs or regulations, other than general traffic control or restrictions

based on size, weight, or class of registration. (23 CFR 660).

OFF-ROAD VEHICLE DESIGNATIONS (BLM)

Open: Designated areas and trails where off-road vehicles may be operated, subject to operating regulations and vehicle standards set forth in BLM Manuals 8341 and 8343; or an area where all types of vehicle use is permitted at all times, subject to the standards in BLM Manuals 8341 and 8343.

Limited: Designated areas and trails where the use of off-road vehicles is subject to restrictions such as limiting the number or types or vehicles allowed, dates and times of use (seasonal restrictions), limiting use to existing roads and trails, or limiting use to designated roads and trails. Under the designated roads and trails designation, use would be allowed only on roads and trails that are signed for use. Combinations of restrictions are possible such as limiting use to certain types of vehicles during certain times of the year.

Closed: Designated areas and trails where the use of off-road vehicles is permanently or temporarily prohibited. The use of off-road vehicles in closed areas may be allowed for certain reasons; however, such use shall be made only with the approval of the authorized officer.

OFF-ROAD VEHICLE DESIGNATIONS (FS)

Open: Areas and trails on which all types of motorized vehicles may be operated off roads without restrictions.

Restricted: Areas and trails on which motorized vehicle use is restricted by times or season of use, types of vehicles, vehicle equipment, designated areas or trails, or types of activity specified in orders issued under the authority of 36 CFR 361.

Closed: Areas and trails on which all motorized vehicle use is prohibited, except by permit, under authority of 36 CFR 261 or by law.

PERENNIAL STREAMS. Streams that flow continuously throughout the year.

PLAN AMENDMENT. The system that provides a step-by-step process for considering multiple resource values, resolving conflicts, and making resource management decisions.

PLANNING CRITERIA. The factors used to guide development of the resource management plan, or revision, to ensure that it is tailored to the issue previously identified and to ensure that unnecessary data collection and analysis are avoided. Planning criteria are developed to guide the collection and use of inventory data and information, the analysis of the management situation, the design and formulation of alternatives, the estimation of the effects of alternatives, the evaluation of alternatives, and the selection of the preferred alternative.

POPULATION. In statistics, the aggregate of all units forming the subject of study; otherwise, a community of individuals that share a common gene pool.

PREFERRED ALTERNATIVE. The agency's preferred alternative, one or more, that is identified in the impact statement (40 CFR 1502.14).

PRESCRIBED BURNING. The intentional application of fire to wildland fuels in either their natural or modified state under such conditions as to allow the fire to be confined to a predetermined area and at the same time to produce the intensity of heat and rate of spread required to further certain planned objectives (ie: silviculture, wildlife management, reduction of fuel hazard, etc.).

PROGRAMMATIC EIS. An environmental impact statement that establishes a broad management direction for an area by establishing a goal, objective, standard, management prescription and monitoring and evaluation requirement for different types of activities which are permitted. It also can establish what activities are not permitted within the specific area(s). This document does not mandate or authorize the permitted activities to proceed.

PROJECT AREA. The geographic area defining the scope of this document and the alternatives proposed by it.

PROJECT FILE. An assemblage of documents that contains all the information developed or used during an environmental analysis. This information may be summarized in an Environmental Assessment or an Environmental Impact Statement. The project file becomes part of the administrative record for judicial review in case of legal action.

PUBLIC LANDS or BLM LANDS. Any land and interest in land (outside of Alaska) owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management.

RANGER DISTRICT. An administrative subdivision of the National Forest, supervised by a district ranger who reports to the forest supervisor.

RECORD OF DECISION. A concise public document disclosing the decision made following preparation of an EIS and the rationale used to reach that decision.

RECREATION VISITOR DAYS (RVD). One 12 hour period of recreation. It can be one person for 12 hours, 2 people for 6 hours, 12 people for 1 hour, etc.

RECREATIONAL OPPORTUNITIES. The combination of recreation settings, activities and experience provided by the forest.

REDD. Spawning nest made by salmon or steelhead in the gravel bed of a river.

RESOURCE MANAGEMENT PLAN. A BLM planning document, prepared in accordance with Section 202 of the Federal Land Policy and Management Act, that presents systematic guidelines for making resource management decisions for a planning area. An RMP is based on an analysis of an area's resources, their existing management, and their capability for alternative uses. RMPs are issue oriented and developed by an interdisciplinary team with public participation.

RESTRICTED ROAD. A National Forest road or segment which is restricted from a certain type of use or all uses during certain seasons of the year or yearlong. The use being restricted and the time period must be specified. The closure is legal when the Forest Supervisor has issued an Order and posted that Order in accordance with 36 CFR 261.

RIPARIAN AREAS/HABITATS. Land areas where the vegetation and microclimate are influenced by perennial and/or intermittent water.

ROADLESS AREA. A national forest area which 1) is larger than 5,000 acres, or if smaller than 5,000 acres, contiguous to a designated wilderness or primitive areas; 2) contains no roads; and 3) has been inventoried for possible inclusion in the wilderness preservation system.

SCOPING. The procedures by which the Forest Service and BLM determine the extent of analysis necessary for a proposed action, i.e., the range of actions, alternatives, and impacts to be addressed, identification of significant issues related to a proposed action, and establishing the depth of environmental analysis, data, and task assignments needed.

SEASONAL CLOSURE. Area or road closed part of the year.

SEDIMENT. Any material carried in suspension by water, which will ultimately settle to the bottom. Sediment has two main sources: from the channel area itself and from disturbed sites.

SEMI-ARID. Moderately dry; region or climate where moisture is normally greater than under arid conditions but still definitely limits the production of vegetation.

SENSITIVE SPECIES. Those species identified by the Regional Forester for which population viability is a concern as evidenced by significant current or predicted downward trends in (a) population numbers or density, or (b) habitat capability that would reduce a species' existing distribution.

SENSITIVITY LEVEL. A particular degree or measure of viewer interest in the scenic qualities of the landscape.

SHRINK-SWELL POTENTIAL. The susceptibility of soil to change in volume due to a loss or gain in moisture content. A shrink-swell potential is typically associated with soils that have a high percentage of clay.

SHRUB. A plant with persistent woody stems and relatively low growth form; usually produces several basal shoots as opposed to a single bole; differs from a tree by its low stature and nonarborescent form.

SIGNIFICANT. As used in NEPA, requires consideration of both context and intensity. Context means that the significance of an action must be analyzed in several contexts such as society as a whole, and the affected region, interests, and locality. Intensity refers to the severity of impacts (40 CFR 1508.27).

SPECIAL STATUS SPECIES. Refers to federally listed threatened or endangered species, federal candidate species, species recognized as requiring special protection by State agencies, and species managed as sensitive species by the FS and/or BLM.

SPECIAL USE PERMIT. A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose.

SPECIES. A unit of classification of plants and animals consisting of the largest and most inclusive array of sexually reproducing and cross-fertilizing individuals which share a common gene pool.

SPECIFIED ROAD. A Forest System Road, including related transportation facilities and appurtenances.

STANDARD. A particular action, level of performance, or threshold specified by the Forest Plan for resource protec-

tion or accomplishment of management objectives. Unlike "guidelines" which are optional, standards specified in the Forest Plan are mandatory.

SUBALPINE. A terrestrial community that generally is found in harsher environments than the montane terrestrial community. Subalpine communities are generally colder than montane and support a unique clustering of wildlife species.

SUMMER RANGE. A range, usually at higher elevation, used by deer and elk during the summer; a summer range is usually much more extensive than a winter range.

THERMAL COVER. Vegetation used by animals to modify the adverse effects of weather. A forest stand that is at least 40 feet in height with tree canopy cover of at least 70 percent provides thermal cover. These stand conditions are achieved in closed sapling-pole stands and by all older stands unless the canopy cover is reduced below 70 percent. Deciduous stands may serve as thermal cover in summer, but not in winter.

THREATENED SPECIES. Any species of plant or animal which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

TIERING. The use of a previously written environmental document with a broad scope to cover discussion of issues common to both.

TRIBE. Term used to designate a Federally recognized group of American Indians and their governing body. Tribes may be comprised of more than one band.

UNDERSTORY. Vegetation (trees or shrubs) growing under the canopy formed by taller trees.

UPLAND. The portion of the landscape above the valley floor or stream.

VIABLE POPULATIONS. A wildlife population of sufficient size to maintain its existence over time in spite of normal fluctuations in population levels.

VISUAL QUALITY OBJECTIVE (VQO). A system of indicating the potential expectations of the visual resource by considering the frequency an area is viewed and the type of landscape.

Maximum Modification: A Visual Quality Objective meaning man's activity may dominate the characteristic landscape but should appear as a natural occurrence when viewed as background.

Modification: A Visual Quality Objective meaning man's activity may dominate the characteristic landscape but must, at the same time, utilize naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middleground.

Partial Retention: A Visual Quality Objective which in general means man's activities may be evident but must remain subordinate to the characteristic landscape.

Preservation: A Visual Quality Objective that provides for ecological change only.

Retention: A Visual Quality Objective which in general means man's activities are not evident to the casual forest visitor.

VISUAL RESOURCE. The composite of landforms, water features, vegetative patterns and cultural features which create the visual environment.

VISUAL RESOURCE MANAGEMENT CLASSES. The degree of acceptable visual changes within a characteristic landscape. A class is based upon the physical and sociological characteristics of any given homogeneous area and serves as a management objective.

WATERSHED. A region or area bounded peripherally by a water parting and draining ultimately to a particular watercourse.

WEED. A plant considered undesirable, unattractive, or troublesome, usually introduced and growing without intentional cultivation.

WILDERNESS. All lands included in the National Wilderness Preservation System by public law; generally defined as undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation.

WINTER RANGE. A range, usually at lower elevation, used by migratory deer and elk during the winter months; usually better defined and smaller than summer ranges.

YEAR-ROUND CLOSURE. Gate, earthen barrier or sign closing a road or area all year long. These areas are sometimes open to the public during harvest or other land management activities.

ABBREVIATIONS AND ACRONYMS

AIRFA	American Indian Religious Freedom Act
ALT	Alternative
ARPA	Archeological Resources Protection Act
ATV	All Terrain Vehicle
BMP	Best Management Practices
BLM	Bureau of Land Management
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulation
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
EM	Ecosystem Management
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EVCC	Existing Visual Condition Class
FEIS	Final Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act
FO	Field Office
FP	Forest Plan
FS	Forest Service
FSH	Forest Service Handbook
FSM	Forest Service Manual
IDT	Interdisciplinary Team
INFISH	Inland Native Fish Strategy
IRA	Inventoried Roadless Area
MA	Management Area
MIS	Management Indicator Species
MNHP	Montana Natural Heritage Program
NAGPRA	Native American Graves Protection and Repatriation Act.
NEPA	National Environmental Policy Act
NF	National Forest
NFMA	National Forest Management Act
NFS	National Forest System
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
OHV	Off-highway Vehicle
PL	Public Law
RAC	Resource Advisory Council
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
RPA	Forest & Rangeland Renewable Resources
RVD	Recreation Visitor Day
SHPO	State Historic Preservation Officer
SUV	Sport Utility Vehicle
SWCP	Soil and Water Conservation Practices
T&E	Threatened and Endangered Species
TES	Threatened, Endangered, and Sensitive Species
USC	United States Code
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USFS	USDA-Forest Service
USFWS	USDI-Fish and Wildlife Service
VMS	Visual Management System
VQO	Visual Quality Objectives
WSA	Wilderness Study Area

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APPENDIX A
EXECUTIVE ORDERS

EXECUTIVE
ORDER 11644

Use of Off-Road Vehicles
on the Public Lands

An estimated 5 million off-road recreational vehicles–motorcycles, minibikes, trail bikes, snowmobiles, dune-buggies, all-terrain vehicles, and others–are in use in the United States today, and their popularity continues to increase rapidly. The widespread use of such vehicles on the public lands–often for legitimate purposes but also in frequent conflict with wise land and resource management practices, environmental values, and other types of recreational activity–has demonstrated the need for a unified Federal policy toward the use of such vehicles on the public lands.

NOW, THEREFORE, by virtue of the authority vested in me as President of the United States by the Constitution of the United States and in furtherance of the purpose and policy of the National Environmental Policy Act of 1969 (42 U.S.C. 4321), it is hereby ordered as follows:

SECTION 1. *Purpose*. It is the purpose of this order to establish policies and provide for procedures that will ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

SEC. 2 *Definitions.* As used in this order, the term:

(1) "public lands" means (A) all lands under the custody and control of the Secretary of the Interior and the Secretary of Agriculture, except Indian lands, (B) lands under the custody and control of the Tennessee Valley Authority that are situated in western Kentucky and Tennessee and are designated as "Land Between the Lakes," and (C) lands under the custody and control of the Secretary of Defense;

(2) "respective agency head" means the Secretary of the Interior, the Secretary of Defense, the Secretary of Agriculture, and the Board of Directors of the Tennessee Valley Authority, with respect to public lands under the custody and control of each;

(3) "off-road vehicle" means any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain; except that such term excludes (A) any registered motorboat, (B) any military, fire, emergency, or law enforcement vehicle when used for emergency purposes, and (C) any vehicle whose use is expressly authorized by the respective agency head under a permit, lease, license, or contract; and

(4) "official use" means use by an employee, agent, or designated representative of the Federal Government or one of its contractors in the course of his employment, agency, or representation.

SEC 3. *Zones of Use.* (a) Each respective agency head shall develop and issue regulations and administrative instructions, within six months of the date of this order, to provide for administrative designation of the specific areas and trails on public lands on which the use of off-road vehicles may be permitted, and areas in which the use of off-road vehicles may not be permitted, and set a date by which such designation of all public lands shall be completed. Those regulations shall direct that the designation of such areas and trails will be based upon the protection of the resources of the public lands, promotion of the safety of all users of those lands, and minimization of conflicts among the various uses of those lands. The regulations shall further require that the designation of such areas and trails shall be in accordance with the following—

(1) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, or other resources of the public lands.

(2) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats.

(3) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

(4) Areas and trails shall not be located in officially designated Wilderness Areas or Primitive Areas. Areas and trails shall be located in areas of the National Park system, Natural Areas, or National Wildlife Refuges and Game Ranges only if the respective agency head determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, or scenic values.

(b) The respective agency head shall ensure adequate opportunity for public participation in the promulgation of such regulations and in the designation of areas and trails under this section.

(c) The limitations on off-road vehicle use imposed under this section shall not apply to official use.

SEC. 4. *Operating Conditions*. Each respective agency head shall develop and publish, within one year of the date of this order, regulations prescribing operating conditions

for off-road vehicles on the public lands. These regulations shall be directed at protecting resource values, preserving public health, safety, and welfare, and minimizing use conflicts.

SEC. 5. *Public Information.* The respective agency head shall ensure that areas and trails where off-road vehicle use is permitted are well marked and shall provide for the publication and distribution of information, including maps, describing such areas and trails and explaining the conditions on vehicle use. He shall seek cooperation of relevant State agencies in the dissemination of this information.

SEC. 6. *Enforcement*. The respective agency head shall, where authorized by law, prescribe appropriate penalties for violation of regulations adopted pursuant to this order, and shall establish procedures for the enforcement of those regulations. To the extent permitted by law, he may enter into agreements with State or local governmental agencies for cooperative enforcement of laws and regulations relating to off-road vehicle use.

SEC. 7. *Consultation.* Before issuing the regulations or administrative instructions required by this order or designating areas or trails as required by this order and those regulations and administrative instructions, the Secretary of the Interior shall, as appropriate, consult with the Atomic Energy Commission.

SEC. 8. *Monitoring of Effects and Review.* (a) The respective agency head shall monitor the effects of the use of off-road vehicles on lands under their jurisdictions. On the basis of the information gathered, they shall from time to time amend or rescind designations of areas or other actions taken pursuant to this order as necessary to further the policy of this order.

(b) The Council on Environmental Quality shall maintain a continuing review of the implementation of this order.

RICHARD NIXON

THE WHITE HOUSE,
February 8, 1972

EXECUTIVE
ORDER 11989

Off-Road Vehicles on Public Lands

By virtue of the authority vested in me by the Constitution and statutes of the United States of America, and as President of the United States of America, in order to clarify agency authority to define zones of use by off-road vehicles on public lands, in furtherance of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq.*), Executive Order No. 11644 of February 8, 1972, is hereby amended as follows:

SECTION 1. Clause (B) of Section 2(3) of Executive Order No. 11644, setting forth an exclusion from the definition of off-road vehicles, is amended to read "(B) any fire, military, emergency or law enforcement vehicle when used for emergency purposes, and any combat or combat support vehicle when used for national defense purposes, and".

SEC. 2. Add the following new Section to Executive Order No. 11644:

"SEC. 9. *Special Protection of the Public Lands.* (a) Notwithstanding the provisions of Section 3 of this Order, the respective agency head shall, whenever he determines that the use of off-road vehicles will cause or is causing considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat or cultural or historic resources of particular areas or trails of the public lands, immediately close such areas or trails to the type of off-road vehicle causing such effects, until such time as he determines that such adverse effects have been eliminated and that measures have been implemented to prevent future recurrence.

(b) Each respective agency head is authorized to adopt the policy that portions of the public lands within his jurisdiction shall be closed to use by off-road vehicles except those areas or trails which are suitable and specifically designated as open to such use pursuant to Section 3 of this Order."

JIMMY CARTER

THE WHITE HOUSE,
May 24, 1977

APPENDIX B
SCHEDULE OF SITE-SPECIFIC OFF-HIGHWAY VEHICLE ANALYSIS AND MONITORING PLAN

GOALS AND OBJECTIVES

The Bureau of Land Management (BLM) and Forest Service Northern Region (FS) recognize in their respective resource management plans and forest plans, policy, and manual direction, that off-highway vehicle (OHV) use is a valid recreational activity when properly managed. The purpose of this Environmental Impact Statement (EIS) and plan amendment is to address the impacts of OHV travel on open areas that are currently available to motorized cross-country travel. It will amend forest plan and resource management plan OHV area designations to preserve future options for travel planning and provide timely interim direction that would prevent further resource damage, user conflicts, and related problems, including new user-created roads, associated with motorized cross-country travel, until subsequent site-specific travel planning is complete. The long-term goal of travel planning is to move toward designated routes and areas. Site-specific travel planning, or activity planning, will address OHV use on specific roads and trails.

To insure that site-specific travel planning is initiated in areas of the most need after the amendment, project areas will be identified by three categories to provide appropriate emphasis for their completion. Priorities for travel planning should be coordinated in areas with adjacent BLM and FS lands. Travel planning can be done at a number of different levels—watershed, sub-unit, or unit, but still provide full coverage of the lands covered in the Record of Decision. Travel planning may be combined with other resource decisions such as forest plans, resource management plans, combined activity plans, or site-specific travel plans.

Recognizing that the need for planning can change from time to time, these lists will be reviewed and updated yearly by the individual Forest Supervisor or Field Office and submitted to the Regional Forester or State Director. Monitoring results, budget restrictions, and workloads will be factors used to make changes in priorities.

PRIORITIZATION OF TRAVEL PLANNING AREAS

The effects found in this EIS/plan amendment, Executive Orders 11644 and 11989, and the factors listed below, along with any additional factors, should be used to determine priorities for travel planning. Within six months of completion of the Record of Decision, each field unit will complete a prioritized list of areas for travel planning in close coordination with the public and other partners such as the Resource Advisory Councils.

Several factors will be used to determine the priority for OHV travel planning and are based on the effects found in this EIS/plan amendment:

- Need to minimize damage to soil, watershed, vegetation or other natural, cultural, and historical resources on BLM and FS lands.
- Need to minimize spread of noxious weeds.
- Need to minimize harassment of wildlife or significant disruption of wildlife habitats.
- Need to minimize conflicts between OHV use and other existing or proposed uses on the same or neighboring BLM and FS lands, and to ensure compatibility of such use with existing conditions in populated areas, taking into account noise and other factors of the human environment.
- Area has opportunity to provide high quality OHV recreation.
- Concern for safety of all users of BLM and FS lands.
- Concern for effectiveness of interim regulations enforcement.
- Inconsistency with established management objectives for the analysis area.
- Need to meet public demand for cross-country OHV use.

PRIORITY PLANNING AREAS

For each field unit, all areas in the affected environment should be included in one of the following categories.

High Priority Areas

These areas currently have high use of OHV's, generally near high population centers. There is a need to address all or most of the factors. Planning will be initiated on these areas within two years of the decision.

Moderate Priority Areas

These areas have localized heavy use. There is a need to address some of the factors in particular public safety and resource damage. Planning will be initiated within five years of the decision.

Low Priority Areas

These areas are generally remote and do not have much OHV use, with the exception of during the hunting season. There are some localized problems, but are easily rectified with emergency closures until the problems are resolved. There are no specific requirements for initiation of travel planning.

MONITORING

Monitoring is an important component of the proposed interim direction. The primary focus is to verify that the interim direction is being applied and enforced on the ground and is preventing the effects addressed in this EIS/ plan amendment. This monitoring plan is not intended to replace the required monitoring at the unit level as directed in 43CFR Subpart 8342.3 and 36CFR 295.5.

Responsibility

It is the responsibility of the OHV Interagency Workgroup to conduct annual joint monitoring trips to review effects of OHV travel on at least two areas throughout the analysis area. The results of these monitoring trips will be presented to the Regional Forester and the State Director in the form of a report.

Objectives

The OHV Interagency Workgroup will utilize the factors established in this Appendix, effects identified in this EIS/ plan amendment as the basis for monitoring, and review of sites selected to determine if conditions are stable or improving in that individual area. Additional factors may be added to the review, such as effectiveness of signing, maps, and education efforts. The results of the reviews will be provided to the individual units to help them determine management needs and to provide input into the yearly update of the OHV travel planning schedule.

APPENDIX C
IMPLEMENTING VEHICLE RESTRICTIONS
INTERAGENCY OFF-HIGHWAY VEHICLE ANALYSIS

BACKGROUND

The Bureau of Land Management (BLM) and Forest Service (FS) Off-highway Vehicle Environmental Impact Statement and Plan Amendment will result in two Records of Decision (ROD). The Montana BLM State Office will issue a ROD that will amend resource management plans for lands administered by BLM in Montana, North Dakota and South Dakota. The FS Northern Region will issue a separate ROD that will amend forest plans as needed in Montana and the Dakota Prairie Grasslands. The following narrative outlines the process the FS will use to implement the decision on National Forest System lands and the process the BLM will use to implement the decision on BLM lands.

FOREST PLAN AND RESOURCE MANAGEMENT PLAN AMENDMENTS

The access management direction in the ROD will affect the forest plans somewhat differently depending on the existing Standards and Guidelines. Forest-wide access management Standards and Guidelines will be changed to be consistent with direction from the ROD. Area specific access direction that is less restrictive than the ROD or the forest-wide standards must be documented through a site-specific National Environmental Policy Act (NEPA) process that addresses the long-term suitability of off-highway vehicle (OHV) use. If no site-specific NEPA analysis exists for areas of less restrictive OHV use, the direction from the ROD will apply until the NEPA process is completed.

The ROD will amend the BLM's resource management plans depending on the current OHV area designations and the selected alternative. The approval of a resource management plan amendment constitutes formal designation of OHV areas. Public notice of redesignation will be provided through publication of a ROD notice in the Federal Register.

Adjustments to travel planning on national forests/grasslands and BLM lands will include: travel management signs, public notices, Code of Federal Regulation (CFR) orders, and enforcement.

Travel Management Signs (Access and Travel Management Northern Region Guide, October 1997)

Federal regulations require posting of a prohibition imposed by an order in such a location and manner as to reasonably bring the prohibition to the attention of the public. This has been broadly interpreted to mean posting travel management signs that describe the nature of the prohibition at the point of restriction. Travel management signs are mandatory where road, trail, or area prohibitions are in effect.

Advance Restriction/Closure Notice — Areas that have historically allowed OHV use and are likely to be restricted or closed in the future, should be considered for advance notice signs. These signs solicit responses from users during the NEPA process. Advance notices should describe the restriction being considered and provide a contact person for comments.

Travel Management Maps

Forest Visitor Maps, BLM Recreation Maps, or other maps and descriptions distributed to the public containing access and travel management opportunities should be updated to reflect the direction from the ROD as soon as practical.

Code of Federal Regulations

The FS regulations for traffic control are contained in Title 36, Chapter II, part 261. The general prohibitions included in Subpart A apply automatically, and optional regulations in Subpart B can be implemented with the issuance of orders.

Implementing the Montana, North Dakota and South Dakota OHV direction will require CFR orders for each national forest and the grasslands. These prohibition orders should be signed by the Forest Supervisor and should reflect the amended travel management for the forest plan. Each order shall:

1. Describe the areas to be restricted. Areas of exception must also be described.
2. Specify the times during which the prohibitions apply.
3. State each prohibition that is applied.
4. Be posted in accordance with 36 CFR 261.51 - to reasonably inform the public.

Samples of orders can be found in the "Access and Travel Management, Northern Region Guide."

The BLM regulations for OHV's are contained in 43 CFR 8342. After designation or redesignation of public lands and public notice, the authorized officer will take action by marking and other appropriate measures to identify designated areas and trails, so that the public will be aware of applicable locations and limitations. The authorized officer will make appropriate information material, including maps, available for public review.

Posting Orders

To be legally enforceable, all FS prohibitions must be posted as required by 36 CFR 261.51 to reasonably bring the prohibition to the public's attention. There are two parts to this requirement and both must be fully met to enforce the restriction:

1. The order must be placed in the office of the Forest Supervisor and the District Ranger. This is met by having a copy of the official order on file and easily accessible at these locations.
2. The prohibition imposed by the order must be displayed for the attention of the public. Proper posting at the common point(s) of entry of the area meets this requirement.

Descriptions of prohibitions should be consistent between the orders, maps, and signs. However, the national standard for defining the prohibition is from the description posted at the point of entry, not from the description on the order or the visitor map.

Enforcement

Forest Officers must enforce Federal orders. The FS has no authority to contract or enter into a cooperative agreements with State or local law enforcement agencies to enforce Federal restrictions.

However, the State of Montana has incorporated Federal travel restrictions into State law which allows the Fish and Game Officers to enforce travel restrictions on National Forest System lands and BLM lands. There is no similar agreement in North Dakota or South Dakota.

Posting of State laws is not necessary for local authorities to enforce State law on National Forest System Lands.

Special-Use Authorizations

FS Line Officers and BLM Field Managers can issue special-use authorizations approving the use of an area that may otherwise be in violation of an order. This is sometimes used instead of specifying exceptions in the CFR order. These exceptions are typically as part of an organized rescue, a fire fighting force, or in the performance of official duties. Special-use authorization may be issued on a case-by-case basis for permitted or contracted activities.

APPENDIX D
TREAD LIGHTLY!

The Forest Service (FS) and Bureau of Land Management (BLM) are involved with many education programs. **Tread Lightly!** is one of these. Based on the same premise as the Smokey Bear and Woodsy Owl education programs that focus on reducing the impacts of fire and litter, **Tread Lightly!** is dedicated to protecting public and private lands through education. Emphasis is placed on responsible use of off-highway vehicles, other forms of backcountry travel, and on low impact principles applicable to all recreation activities.

Initially begun by the FS in 1985 and adopted by the BLM, today **Tread Lightly!** is a non-profit organization uniting a broad spectrum of federal and state government agencies, manufacturers of recreational products, media, enthusiast groups and concerned individuals who share a common goal for natural resources.

Some of the education principles of **Tread Lightly!** are:

- Stay on designated roads and trails so new scars are not established. Avoid sensitive areas at all times, especially sensitive areas susceptible to scarring, such as streambanks, lakeshores and meadows.
- Cross streams only at fords where the road or trail intersects the stream.
- Hill climb only in designated areas.
- Be sensitive to the life-sustaining needs of wildlife and livestock.
- In deep snow, stay clear of game so vehicle noise and close proximity do not add stress to animals struggling to survive.

The **Tread Lightly!** Pledge is:

- Travel and recreate with minimum impact.
- Respect the environment and the rights of others.
- Educate yourself, plan and prepare before you go.
- Allow for future use of the outdoors. Leave it better than you found it.
- Discover the rewards of responsible recreation.

There are other education programs designed for motorized recreationists, such as **Right Rider** and **Stay on the Right Trail** with similar principles: share the trail, be courteous to others, keep noise down, pack out your trash, respect wildlife, don't spread weeds, avoid wetlands, stay on the trail, and respect private lands. The **Leave No Trace** education program is similar, except geared for non-motorized backcountry and wilderness users. The principles of **Leave No Trace** are: plan ahead and prepare, camp and travel on durable surfaces, pack it in, pack it out, properly dispose of what you can't pack out, leave what you find, and minimize use and impact from fires.

APPENDIX E
THREATENED, ENDANGERED, AND SENSITIVE SPECIES

THREATENED AND ENDANGERED SPECIES WHICH MAY OCCUR IN THE ANALYSIS AREA

Listed Species

Montana
Bald eagle (*Haliaeetus leucocephalus*)
Peregrine falcon (*Falco peregrinus*)
Black-footed ferret (*Mustela nigripes*)
Whooping crane (*Grus americana*)
Piping plover (*Charadrius melodus*)
Least tern (*Sterna antillarum*)
Pallid sturgeon (*Scaphirhvnchus albus*)
Gray wolf (*Canis lupin*)
White sturgeon *(Acipenser transmontanus)*
Grizzly bear *(Ursus arctos horribilis)*
Bull trout *(Salvelinus confluentus)*
Water howellia *(Howellia aquatilis)*
Ute ladies' tresses *(Spiranthes diluvialis)*

North Dakota
Bald eagle (*Haliaeetus leucocephalus*)
Peregrine falcon (*Falco peregrinus*)
Black-footed ferret (*Mustela nigripes*)
Whooping crane (*Grus americana*)
Piping plover (*Charadrius melodus*)
Least tern (*Sterna antillarum*)
Pallid sturgeon (*Scaphirhvnchus albus*)
Western prairie fringed orchid *(Platanthera praeclara)*

South Dakota
Bald eagle (*Haliaeetus leucocephalus*)
Peregrine falcon (*Falco peregrinus*)
Black-footed ferret (*Mustela nigripes*)
Whooping crane (*Grus americana*)
Piping plover (*Charadrius melodus*)
Least tern (*Sterna antillarum*)
American burying beetle (*Nicrophorus americanus*)
Pallid sturgeon (*Scaphirhvnchus albus*)

Proposed Species

Mountain plover *(Charadrius montanus)*
Canada lynx *(Lynx canadensis)*

Source: USFWS; Montana Ecological Services, North Dakota Ecological Services, and South Dakota Ecological Services

BUREAU OF LAND MANAGEMENT - SPECIES OF SPECIAL CONCERN - ANIMALS

Mammals

Black-tailed prairie dog (*Cynomys ludovicianus*)
Fisher (*Martes pennati*)
Meadow jumping mouse (*Zapus hudsonius*)
Merriam's shrew (*Sorex merriami*)
North American lynx (*Felis lynx*)
North American Wolverine (*Gulo gulo luscus*)
Northern bog lemming (*Synaptomys borealis*)
Preble's shrew (*Sorex preblei*)
Pygmy rabbit *(Brachylagus idahoensis*)
Spotted bat (*Euderma maculatum*)
Spotted skunk (*Spilogale putorius*)
Swift fox (*Vulpes velox*)
Townsend's big-eared bat (*Plecotus townsendii*)
White-tailed prairie dog (*Cynomys leucurus*)
Woodland caribou (*Rangifer tarandus caribou*)

Birds

Baird's sparrow (*Ammodramus bairdii*)
Black backed woodpecker (*Picoides arcticus*)
Black tern (*Chlidonias niger*)
Boreal owl (*Aegolius funereus*)
Burrowing owl (*Athene cunicularia*)
Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*)
Common loon (*Gavia immer*)
Canvasback duck *(Aythya valisineria*)
Dickcissel (*Spiza americana*)
Ferruginous hawk (*Buteo regalis*)
Great gray owl (*Strix nebulosa*)
Hairy woodpecker (*Picoides villosus*)
Harlequin duck (*Histrionicus histrionicus*)
LeConte's sparrow (*Ammodramus leconteii*)
Loggerhead shrike (*Lanius ludovicianus*)
Long billed curlew (*Numenius americanus*)
Mountain plover (*Charadrius montanus*)
Northern goshawk (*Accipiter gentilis*)
Pileated woodpecker (*Dryocopus pileatus*)
Sage sparrow *(Amphispiza belli*)
Swainson's hawk (*Buteo swainsoni*)
Three-toed woodpecker (*Picoides tridactylus*)
Trumpeter swan (*Cygnus buccinator*)
White-faced ibis (*Plegadis chihi*)

Reptiles

Snapping turtle (*Chelydra serpentina*)
Spiny softshell turtle (*Trionyx spiniferus*)

Amphibians

Canadian toad (*Bufo hemiophrys*)
Coeur d'Alene salamander (*Plethodon idahoensis*)
Spotted frog (*Rana pretiosa*)
Tailed frog (*Ascaphus truei*)
Wood frog (*Rana sylvatica*)

Fish

Arctic grayling (fluvial pop.)(*Thymallus arcticus*)
Blue sucker (*Cycleptus elongatus*)
Northern redbelly X Finescale dace (*Phoxinus eos*) X (*Phoxinus neogaeus*)
Paddlefish (*Polyodon spathula*)
Pearl dace *(Margariscus margarita nachtriebi*)
Shortnose gar (*Lepisosteus platostomus*)
Sicklefin chub (*Macrhybopsis(Hybopsis) meeki*)
Sturgeon chub (*Machybobpis (Hybopsis) gelida*)
Westslope cutthroat trout (*Oncorhychus clarki lewisi*)
Yellowstone cutthroat trout (*Oncorhychus clarki bouvieri*)

FOREST SERVICE, NORTHERN REGION - SENSITIVE SPECIES

Montana, North Dakota and South Dakota

Arogos skipper (*Atrytona argos*)
Baird's sparrow (*Ammodramus bairdii*)
Belfragi's bug (*Chlorochroa belfragi*)
Black backed woodpecker (*Picoides arcticus*)
Black-tailed prairie dog (*Cynomys ludovicianus*)
Bighorn sheep (*Ovis canadensis californiana*)
Boreal toad (*Bufo boreas boreas*)
Burrowing owl (*Athene cunicularia*)
Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*)
Common loon (*Gavia immer*)
Coeur d'Alene salamander (*Plethodon idahoensis*)
Dakota skipper (*Hesperia dacotae*)
Fisher (*Martes pennati*)
Flammulated owl (*Otus flammeolus*)
Greater prairie chicken (*Tympanuchus cupido*)
Harlequin duck (*Histrionicus histrionicus*)
Interior redband trout (*Oncorhynchus mykiss gairdneri*)
Ling (*Lota lota*)
Loggerhead shrike (*Lanius ludovicianus*)
Montana arctic grayling (*Thymallus arcticus montanus (Fluvial)*)
Northern bog lemming (*Synaptomys borealis*)
Northern goshawk (*Accipiter gentilis*)
Northern leopard frog (*Rana pipiens*)
Ottoe skipper (*Hesperia ottoe*)
Pallid bat (*Antrozous pallidus*)
Powesheik skipperling (*Oarisma powesheik*)
Pygmy rabbit *(Brachylagus idahoensis*)
Regal fritillary (*Speyeria idalia*)
Sage grouse (*Centrocercus urophasianus*)
Sicklefin chub (*Macrhybopsis(Hybopsis) meeki*)
Spotted bat (*Euderma maculatum*)
Sprague's pipit (*Anthus spragueii*)
Sturgeon chub (*Machybobpis (Hybopsis) gelida*)
Swift fox (*Vulpes velox*)
Tawny crescent butterfly (*Phyclodes batesi*)
Torrent sculpin (*Cottus rhotheus*)
Townsend's big-eared bat (*Plecotus townsendii*)
Trumpeter swan (*Cygnus buccinator*)
Westslope cutthroat trout (*Oncorhychus clarki lewisi*)
White-tailed prairie dog (*Cynomys leucurus*)
Wolverine (*Gulo gulo*)
Yellowstone cutthroat trout (*Oncorhychus clarki bouvieri*

BUREAU OF LAND MANAGEMENT - SENSITIVE PLANT SPECIES

SCIENTIFIC NAME

Montana, North Dakota and South Dakota

Agastache cusickii
Arabis fecunda
Astragalus ceramicus apus
Astragalus geyeri
Astragalus scaphoides
Astragalus terminalis
Camissonia andina
Camissonia parvula
Carex crawei
Carex parryana idahoa
Cryptantha scoparia
Elymus flavescens
Eriogonum salsuginosum
Lesquerella carinata languida
Lesquerella lesicii
Lesquerella pulchella
Lomatium attenuatum
Malacothrix torreyi
Nama densum
Oenothera pallida idahoensis
Penstemon lemhiensis
Penstemon whippleanus
Quercus macrocarpa
Shoshonea pulvinata
Sphaeromeria argenta
Taraxacum eriophorum
Thalictrum alpinum
Thelypodium paniculatum

FOREST SERVICE, NORTHERN REGION - SENSITIVE PLANT SPECIES

SCIENTIFIC NAME

Montana

Agastache cusickii
Antennaria densifolia
Arabis fecunda
Astragalus barrii
Astragalus lackschewitzii
Astragalus scaphoides
Balsamorhiza macrophylla
Botrychium ascendens
Botrychium crenulatum
Botrychium hesperium
Botrychium montanum
Botrychium paradoxum
Botrychium pedunculosum
Bryoria subdivergens
Carex parryana ssp. idahoa
Castilleja covilleana
Castilleja gracillima
Cetraria subalpina
Cirsium longistylum
Collema curtisporum
Erigeron lackschewitzii
Grimmia brittoniae
Grindelia howellii
Haplopappus aberrans
Haplopappus carthamoides var. subsquarrosus
Lesquerella humilis
Lesquerella paysonii
Lesquerella pulchella
Lomatium geyeri
Oxytropis campestris var. columbiana
Penstemon lemhiensis
Phlox kelseyi var. missoulensis
Saussurea weberi
Saxifraga tempestiva
Shoshonea pulvinate
Waldsteinia idahoensis
Adoxa moschatellina
Allium acuminatum
Allium parvum
Allotropa virgata
Amerorchis rotundifolia
Aquilegia brevistyla
Asclepias ovalifolia
Athysanus pusillus
Bidens beckii
Brasenia schreberi

Carex amplifolia
Carex chordorrhiza
Carex gravida var. gravida
Carex livida
Carex paupercula
Carex prairea
Carex rostrata
Carex vaginata
Clarkia rhomboidea
Claytonia arenicola
Corydalis sempervirens
Cypripedium fasciculatum
Cypripedium parviflorum
Cypripedium passerinum
Diphasiastrum sitchense
Drosera anglica
Drosera linearis
Dryopteris cristata
Eleocharis rostellata
Elymus innovatus
Epipactis gigantea
Erigeron asperugineus
Erigeron evermannii
Eriophorum gracile
Eupatorium occidentale
Gentianopsis macounii
Gentianopsis simplex
Glossopetalon nevadense
Goodyera repens
Halimolobos perplexa var. lemhiensis
Haplopappus macronema var. macronema
Heteranthera dubia
Heterocodon rariflorum
Idahoa scapigera
Juncus hallii
Kalmia occidentalis
Lathyrus bijugatus
Liparis loeselii
Lomatogonium rotatum
Lycopodiella inundata
Lycopodium dendroideum
Meesia triquetra
Mertensia bella
Mimulus patulus
Mimulus primuloides
Ophioglossum pusillum
Orogenia fusiformis
Oxytropis podocarpa
Penstemon payettensis
Petasites frigidus var. nivalis
Phegopteris connectilis
Polygonum douglasii ssp. austinae
Potamogeton obtusifolius
Potentilla quinquefolia
Psilocarphus brevissimus
Ranunculus jovis
Salix barrattiana
Salix wolfii var. wolfii
Scheuchzeria palustris
Scirpus cespitosus
Scirpus subterminalis
Scorpidium scorpioides
Thalictrum alpinum
Trifolium eriocephalum
Trifolium gymnocarpon
Utricularia intermedia
Veratrum californicum
Viola renifolia

North Dakota and South Dakota

Astragalus barrii
Carex formosa
Chenopodium subglabrum
Eriogonum visheri
Athyrium filix-femina
Botrychium multifidum
Botrychium simplex
Campanula aparinoides
Carex alopecoidea
Carex leptalea
Collinsia parviflora
Cryptantha torreyana
Cyperus bipartitus
Cyperus diandrus
Cypripedium candidum
Cypripedium reginae
Dryopteris carthusiana
Dryopteris cristata
Equisetum palustre
Equisetum pratense
Eriogonum cernuum
Eriophorum gracile
Euonymus atropurpurea
Galium labradoricum
Gentiana affinis
Gymnocarpium dryopteris
Helianthemum bicknellii
Hudsonia tomentosa
Lechea stricta
Leucocrinum montanum
Liparis loeselii
Mentzelia pumila
Menyanthes trifoliata
Mertensia ciliata
Onoclea sensibilis
Ophioglossum pusillum
Phlox alyssifolia
Pinus flexilis
Populus x acuminata
Ribes cynosbati
Salix pedicellaris
Solidago flexicaulis
Sporobolus airoides
Thelypteris palustris
Townsendia hookeri
Triplasis purpurea